Monitoring Well Purging and Sampling Form

Site Name: Miskew "in" Well W/ Ammonium Sample Location: MW-12

Personnel: DPC Sample ID: SAA

Date: 6-10-14 Field Conditions: Sunny - Lightly windy, 60's

Condition of Well: Excellent

Depth to Water (DTW): 2.95 Total Depth of Well (TD): 107'

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 101.5 Three Well Volumes: 51.3

Purge Equipment: ~~Bail pump~~/ Disp bailer Pump Depth: Start Time: 12:25

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
12:50	22.0			NA	877	12.9		0.76	10	
13:10	29.0			"	889	12.8		0.79	10	
13:15	34.0				882	10.7		0.86	10	

Sample Time: 13:30 Sampling Method: Disposable bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 52.0 Final Depth to Water: End Time:

Notes:

Sampler Signature:

County Fergus

Facility & # 302

Closure	Landfarm
Finan Assur	Liner
GW Corr Meas	Methane
GW Monitoring	O & M
GW Reports	Run-on
Inspections	

Other:

Monitoring Well Purging and Sampling Form

Site Name: Whistler Landfill Sample Location: MW-11

Personnel: OPC Sample ID: SAA

Date: 6-1-14 Field Conditions: See MW-12

Condition of Well: Excellent

Depth to Water (DTW): 30.15 Total Depth of Well (TD): 53.2

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: Three Well Volumes: 3.91

Purge Equipment: Disp. Bailer Pump Depth: Start Time: 1305

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1305	3.75			NA	.808	14.8		.067	10	DO = 0.68
1400	4.0			NA	.822	12.3		0.75	10	

Sample Time: 1410 Sampling Method: Disp. Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 4.5 Final Depth to Water: End Time: 1415

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Whistler Landfill Sample Location: mw-9r

Personnel: OTC Sample ID: SAA

Date: 6-10-14 Field Conditions: pt. cloudy - rain coming 70°F

Condition of Well: good

Depth to Water (DTW): 41.29 Total Depth of Well (TD): 51

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: Three Well Volumes: 5.1

Purge Equipment: Disp. Bailer Pump Depth: Start Time: 1425

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1430	4.0			7.10	950	14.0			10	rusty color
1440	5.2			7.30	960	14.3		0.71	90	

Sample Time: 1445 Sampling Method: Disposable bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 5.25 Final Depth to Water: End Time:

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Wisconsin Landfill Sample Location: MW-OW

Personnel: JTR Sample ID: SAA

Date: 6-20-14 Field Conditions: Sunny - 70's

Condition of Well: Fair

Depth to Water (DTW): 29.05 Total Depth of Well (TD): 80

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: _____ Three Well Volumes: 3 stable readings

Purge Equipment: Bigg's Bailer Pump Depth: _____ Start Time: 1500

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1515	5.0			7.25	802	11.2		0.82	10	
1525	10.0			7.29	793	11.0		0.85	3	
1530	15.0			7.35	795	10.7		0.87	10	

Sample Time: 1545 Sampling Method: Bigg's bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 3 stable readings Final Depth to Water: _____ End Time: _____

Notes: 4" well 50' (.65) =

Sampler Signature: _____

Water Level Measurement Form

Site Name: _____ Date: _____

Personnel: _____ Equipment: _____

Field Conditions: _____

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments

Notes: _____

Signature: _____

Page ____ of ____

Monitoring Well Purging and Sampling Form

Site Name: Miskel m Cultiv Sample Location: mw-HW

Personnel: OPC Sample ID: SAA

Date: 6-10-14 Field Conditions: sunny 70's

Condition of Well:

Depth to Water (DTW): NA/ pump Total Depth of Well (TD): pump in well

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: Three Well Volumes:

Purge Equipment: well pump Pump Depth: Start Time: 16[00]

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
16[10]				6.91	977	14.1		0.67	10	
16[15]				6.98	994	14.5		0.53	10	

Sample Time: 16[15] Sampling Method: direct through hydrant

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 50+ gal Final Depth to Water: End Time: 16[20]

Notes:

Sampler Signature:

County Fergus

Facility & # 302

Closure

Finan Assur

GW Corr Meas

GW Monitoring

GW Reports

Inspections

Other:

Landfarm

Liner

Methane

O & M

Run-on

Methane Monitoring Form

Site Name: Mr M

Date: 4-8-08

Personnel: Martin Van Oort & Joe Blaine

Field Conditions: Mostly sunny, breezy, 50's

Meter Model: GF6-6450

Calibration Time: 1300 Standard: 50%, LEL Pre-Reading: Post-Reading: 50.1%

Measurement Point	Time	Methane (LEL)	Oxygen	CO	H_2S	Comments
MW-1	1310	0	20.9	0	0	
MW-2	1320	0	20.9	0	0	
MW-6M	1335	0	20.9	0	0	
MW-5M	1345	0	20.9	0	0	
Gas Vent	1400	22.5	19.6	0	0	

Notes: 4-5 seeps with oily sheen, 3-4 other seeps

Signature:

Methane Monitoring Form

Site Name: Mister M Landfill Date: 1-21-09

Personnel: Martin Van Oort & Joe Blaine

Field Conditions: Sunny, 40's

Meter Model: GFG G450

Calibration 1-16-09
Time: 1530 Standard: 50% LEL Pre-Reading: 42.3% Post-Reading: 49.8%

Measurement Point	Time	% LEL Methane	Oxygen	Comments
MW 8	8:00 AM	0	20.9	No Cap
MW 11 M	9:21	0	20.9	not methane cap
MW-6M	9:55	0	20.9	" " "
MW-5M	10:15	0	20.9	" " "

Notes:

Signature: [illegible]

Page 1 of 1

Methane Monitoring Form

Site Name: Master M Date: 6-1-08

Personnel: Martin Van Pelt

Field Conditions: Rain - 50's

Meter Model: GFG 6450

Calibration
Time: 1035 Standard: 50%, LEL Pre-Reading: 51.5% Post-Reading: 50.5%,

Measurement Point	Time	~~CH_4~~ % LEL	O_2	CO	H_2S	Comments
MW-1	1055	0	18.0	0	0	Now Cap
MW-2	1122	0	20.8	0	0	" "
MW-6M	1145	0	20.8	0	0	" "
MW-5M	1155	0	20.8	0	0	" "
South Vent	1215	0	20.9	0	0	On side slope - horizontal pipe
North Vent	1220	1.0	18.2	0	0	

Notes:

Signature: [signature]

Page 1 of 1

Methane Monitoring Form

Site Name: Mistic M

Date: 6-1-1998

Personnel: Frank Vasquez

Field Conditions: Rain - 50's

Meter Model: GFG GX29

Calibration
Time: 10:35 Standard: 50 LEL Pre-Reading: 51.3 Pre-Reading: 50.52

Measurement Point	Time	Gas	CO	H2S	Comments
MW-1	10:55	0	18.2	0	0	MW-2 - 0
MW-2	11:22	0	20.9	0	0	" "
MW-3M	11:45	0	20.8	0	0	" "
MW-5M	11:55	0	20.8	0	0	" "
Stock Vent	12:15	0	20.8	0	0	Gas stack - blow out
Mistic Vent	12:20	100	18.3	0	0	

Notes:

Signature: [illegible]

Page 1 of 1

Water Level Measurement Form

Site Name: Mister M Date: 6-1-09

Personnel: Martin VanDort Equipment: Solinst 200' tape

Field Conditions: Light Rain 50's

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-9W	1105	25.66			TD = 78.42
MW-8R	1115	37.75			
MW-10R	1125	25.19			
MW-5	1200	46.33			TD = 104.88
[redacted]	[redacted]				

Notes:

Signature: [signature]

Page 1 of 1

Water Level Measurement Form

Site Name: Mystic M Date: 6-1-09

Personnel: Mystic Vadose Equipment: Solinst 200' tape

Field Conditions: Light Rain 50's

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-4W	1105	25.66			TD = 28.42
MW-7R	1115	32.25			
MW-10d	1125	27.19			
MW-5	1200	86.55			TD = 104.83

Notes:

Signature: [illegible] Page 1 of 1

Water Quality Meter Calibration Form

Site Name: Mister M. Landfill Date: 6-1-09

Personnel: Martin Van Dort

Field Conditions: Cloudy ~60°

Meter Model: Horiba U-10

Parameters/Sensors: pH, Cond, Turb, DO

			Pre-Calibration Reading		Post-Calibration Reading	
Parameter	Units	Standard Value	Time	Value	Time	Value
pH	std	4.00	1315	3.90	1320	3.99
Cond	mS/cm	4.50	1315	4.52	1320	4.50
DO	mg/L	Error	1315	-0.07	1320	Error
Turb	NTU	0	1315	-10	1320	0
6-5-09						
pH	std	4.00	730	4.09	735	3.99
Cond	mS/cm	4.50	730	4.47	735	4.51
Turb	NTU	0	730	179	735	0

Notes: DO sensor not functioning

Signature: [signature]

Water Quality Meter Calibration Form

Site Name: Mike Mitchell Date: 6-1-09

Personnel: Mike V. D.-T.

Field Conditions: Clear, 65°

Meter Model: Hach 2100

Parameters Checked: pH, Cond, Turb, DO

Parameter	Units	Standard Value	Pre-Calibration Reading	Post-Calibration Reading	Pre-Calibration Reading	Post-Calibration Reading
pH	-	4.00	3.97	4.00	3.98	4.00
Cond	mS/cm	4.50	4.52	4.50	4.50	4.50
DO	mg/L					
Turb	NTU	0	-10	0	-10	0

6-5-09

pH	-	4.00	4.09	4.00	3.99	4.00
Cond	mS/cm	4.50	4.42	4.50	4.51	4.51
Turb	NTU	0	1.28	0	2.55	0

Notes: DO sensor not functioning

Signature: [illegible]

Monitoring Well Purging and Sampling Form

Site Name: Mr. M Landfill Sample Location: MW-HW

Personnel: Martin Van Oort Sample ID: M-M-MW-HW

Date: 6-1-09 Field Conditions: Mostly Cloudy ~ 60°

Condition of Well: Frost free spigot near back of house

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed pump Pump Depth: — Start Time: 1400

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1406	5			5.63	0.622	9.7			6	
1408	10			6.07	0.604	10.1			10	
1411	15			6.36	0.601	10.1			4	
1413	20			6.51	0.605	9.9			3	
1416	25			6.62	0.608	9.9			0	
1418	30			6.69	0.609	9.9			4	

Sample Time: 1420 Sampling Method: Spigot

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
500mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 55 gal Final Depth to Water: — End Time: 1430

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mr. M Landfill Sample Location: MW-11W

Personnel: M. Jo & Dat Sample ID: MW-11W

Date: 6-1-09 Field Conditions: Mostly Clear & 60°

Condition of Well: Good Form Sprout Water but at Water

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

Ok = Well Volume (gallons) = (TD - DTW) x C: — Times Well Volume: —

Purge Equipment: Teflon pump Pump Depth: — Start Time: 1400

Time	Vol (gal)	Rate (gpm)	DTW (ft)	pH (su)	SC (mmhos)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1405	5			6.25	0.624	9.7			6	
1410	10			6.07	0.610	10.1			10	
1415	15			6.56	0.601	10.1			5	
1420	20			6.51	0.605	9.8			3	
1425	25			6.56	0.606	9.9			0	
1430	30			6.52	0.607	9.9			1	

Sample Time: 1420 Sampling Method: Bailer

Laboratory: Fairchase Analyses

Parameters	Preservatives	Comments
2 x 40ml vial	HCl	VOCs
500m Plastic	HNO_3	Cyanide
500m Plastic	HNO_3	Dissolved Metals
500m Plastic	H_2SO_4	Nitrate/Nitrite, COD
500m Plastic	None	Sulfate, Chloride, pH, SC

Total Volume Purged: 55 gal Final Depth to Water: — End Time: 1430

Notes:

Sampler Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mr. M Landfill Sample Location: Office Well

Personnel: Martin Van Oort Sample ID: MW-OW

Date: 6-1-09 Field Conditions: Partly Cloudy, ~60°, breezy

Condition of Well: No outer casing

Depth to Water (DTW): 25.67 Total Depth of Well (TD): —

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: bailer Pump Depth: — Start Time: 1520

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1525				7.34	0.511	10.1			27	
1530	1.4			7.15	0.500	9.1			19	
1537	3.0			7.13	0.501	8.9			21	
1544	4.7			7.13	0.502	8.8			18	
1552	6.3			7.13	0.502	8.6			18	

Sample Time: 1555 Sampling Method: bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
500mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 7 gal Final Depth to Water: 25.71 End Time: 1622

Notes: Duplicate 1605

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mesa Lake Mill Sample Location: OU-4 Well

Personnel: Mark Van Dort Sample ID: MW-4 W

Date: 6-1-09 Pre Conditions: Partly Cloudy, 60°, breezy

Condition of Well: Not Purged

Depth to Water (DTW): 25.67 Total Depth of Well (TD): —

Well Diameter: 4" Well Volume Conversion (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C — Tubing Well Volume: —

Purge Equipment: bailer Pump Depth: — Start Time: 1520

Time	Vol (gal)	Flow (gpm)	DTW (feet)	pH (std)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1525				7.54	5.510	10.1			2.7	
1530	1.4			7.45	5.500	9.1			1.6	
1537	3.0			7.43	5.501	8.7			2.1	
1544	4.2			7.43	5.502	8.3			1.8	
1552	6.5			7.43	5.502	8.0			1.8	

Sample Time: 1555 Sampling Method: bailer

Preservative	Preservative	Parameters	Comments
O_2 above Total	HCl	Volatiles	
100ml Plastic	HNO_3	Extractables	
500ml Plastic	H_2SO_4	Dissolved Metals	
250ml Plastic	H_2SO_4	Total Metals, DOC	
250ml Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 7 gal Final Depth to Water: 25.71 End Time: 1622

Notes: Purged dry 1605

Sampler Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin Van Dort Sample ID: M-M-MW-9R

Date: 6-2-09 Field Conditions: Sunny, breezy ~60°

Condition of Well: Good

Depth to Water (DTW): 38.27 Total Depth of Well (TD): 50.51

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 2.0 Three Well Volumes: 6.0

Purge Equipment: bailer Pump Depth: — Start Time: 1100

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1107	0.5			7.32	0.97	10.1			15	
1117	1.5			7.22	0.97	9.0			287	
1122	2.6			7.20	0.97	8.8			343	
1127	3.7			7.18	0.98	8.9			736	
1134	5.0			7.19	0.99	9.0			999	
1140	5.5	DRY								

Sample Time: 1450 Sampling Method: bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
500mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 6 Final Depth to Water: — End Time: 1505

Notes: Purged dry at 1140, let stand to recover

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Martin M Lumber Sample Location: MW-8R

Personnel: Martin Vas D-1 Sample ID: M-MW-8R

Date: 6-2-09 Field Conditions: Sunny, Hot 80°

Condition of Well: Good

Depth to Water (DTW): 23.27 Total Depth of Well (TD): 30.31

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

Onsite Well Volume (gallons) = (TD - DTW) x C: 1.2 Three Well Volumes: 3.6

Purge Equipment: Peristaltic Pump Depth: — Start Time: 1102

Time	Vol (gal)	Rate (gpm)	DTW (feet)	pH (s.u.)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1107	0.5			7.26	0.27	19.1			15	
1112	1.0			7.16	0.27	19.2			12.7	
1117	1.5			7.13	0.27	19.2			9.4	
1122	2.0			7.12	0.27	19.2			8.3	
1127	2.5			7.10	0.27	19.2			7.6	
1130	3.0			7.10	0.27	19.2			7.5	
1135	3.5		DRY							

Sample Time: 1145 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
500mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 3.5 Final Depth to Water: 44 End Time: 1205

Notes: Purged dry at 1130, let stand to recover

Sampler Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-10R

Personnel: Martin Van Oort Sample ID: MrM-MW-10R

Date: 6-2-08 Field Conditions: Sunny, breezy, 60°s

Condition of Well:

Depth to Water (DTW): 25.39 Total Depth of Well (TD): 50.47

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 4.1 Three Well Volumes: 12.3

Purge Equipment: bailer Pump Depth: — Start Time: 1205

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1210	0.5			7.77	0.93	11.4			6	
1217	2			7.66	0.96	9.3			160	
1227	4			7.58	1.00	9.1			106	
1234	6.5			7.52	1.00	8.9			61	
1241	8.5			7.57	1.01	8.8			119	
1248	10.5			7.57	1.02	8.8			74	
1253	11.5			7.55	1.02	8.8			104	
1257	12.5			7.54	1.03	8.6			109	

Sample Time: 1300 Sampling Method: bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 12.5 Final Depth to Water: 25.65 End Time: 1320

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Master M Landfill Sample Location: MW-5

Personnel: Martin Van Oort Sample ID: MrM-MW-5

Date: 6-2-08 Field Conditions: Sunny, breezy ~65°

Condition of Well: Good

Depth to Water (DTW): 96.33 Total Depth of Well (TD): 104.88

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 1.4 Three Well Volumes: 4.2

Purge Equipment: bailer Pump Depth: — Start Time: 1610

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1627	1.4			7.13	1.07	8.8			543	
1638	2.1			7.19	1.07	8.3			107	DRY
6-3										
738			100.93							

Sample Time: 6-3-08 750 Sampling Method: bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: Final Depth to Water: End Time:

Notes: Purged dry at 1638, let recover

Sampler Signature: MVO

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: Office Well

Personnel: Martin Van Oort Sample ID: MrM-OW-VOC

Date: 6-5-09 Field Conditions: Mostly cloudy, windy, ~50°

Condition of Well: —

Depth to Water (DTW): 26.04 Total Depth of Well (TD): —

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: bailer Pump Depth: — Start Time: 745

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
748				5.89	0.548	9.0			10	
757	1.5			6.77	0.511	8.7			12	
809	3.3			6.81	0.510	8.5			8	
816	4.8			6.95	0.511	8.3			6	
822	6.0			7.07	0.512	8.4			9	
826	6.5			7.06	0.512	8.4			10	

Sample Time: 830 Sampling Method: bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 6.8 Final Depth to Water: — End Time: 835

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mid-Manhattan Sample Location: [illegible]

Personnel: Mike Van Ost Sample ID: MM-OW-VOC

Date: 6-5-02 Field Conditions: Mostly cloudy, warm, 50°

Condition of Well:

Depth to Water (DTW): 26.04 Total Depth of Well (TD):

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C Time: Well Volume Reached

Purge Equipment: bailer Pump Depth: End Time: 7:45

Time	Vol. (liter)	Temp. (degree)	DTW (feet)	pH (unit)	SC (mmhos/cm)	Turb. (NTU)	ORP (mV)	DO (mg/l)	Appearance (color)	Comments
7:18					5.85	0.548	3.0		10	
7:27	1.5				6.27	0.511	6.7		15	
7:29	2.5				6.31	0.510	2.5		8	
7:16	3.8				6.25	0.511	8.3		6	
7:25	6.0				7.07	0.512	2.5		20	
7:25	6.5				7.06	0.512	2.4		10	

Sample Time: 7:30 Sampling Method: bailer

Containers	Preservative	Parameters	Container
2x 40ml Vial	HCl	VOCs	
250ml Plastic	NaOH	Cyanide	
250ml Plastic	HNO_3	Dissolved Metals	
250ml Plastic	H_2SO_4	Nitrate, Nitrite, COD	
250ml Plastic	none	Alkalinity, Chloride, pH, SC	

Total Volume Purged: 6.5 Final Depth to Water: End Time: 7:35

Notes:

Sampler Signature: [illegible] Page 1 of 1

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ Solid Waste Section	Mister Mr. Landfill	State: MT	Yes ☒ No ☐
Report Mail Address:	**Contact Name:** / **Phone/Fax:**	**Email:**	**Sampler: (Please Print)**
PO Box 200901, Helena, MT 59620	Martin Van Oort 406-444-2802 or 614-291-8916	mdvanoort@yahoo.com	Martin Van Oort
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
same	same		4127

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- ☐ DW
- ☐ GSA
- ☐ POTW/WWTP
- ☒ State: Solid Waste
- ☐ Other: _____
- ☐ A2LA
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

RUSH — Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments: Total & Dissolved Metals are Table 2 Landfill list.

Shipped by: Hand

Cooler ID(s):

Receipt Temp: 3.2 °C

On Ice: Yes No

Custody Seal Y N

Bottles/Coolers B C

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Dissolved Metals	Nitrate/Nitrite	COD	VOCs - Table 1	Cyanide	Cl, SO4, pH, Cond.	VOCs - Short list	Total Metals				Normal Turnaround (TAT)	RUSH	Comments
1	MrM-HW	6-1-09	1420	7-W	X	X	X	X	X									
2	MrM-MW-OW	6-1-09	1555	7-W	X	X	X	X	X									
3	MrM-MW-OW-D	6-1-09	1605	7-W	X	X	X	X	X									
4	MrM-LS-01	6-1-09	1700	6-W		X	X		X		X							← Forgot to label unpreserved VOC
5	MrM-MW-10R	6-2-09	1500	7-W	X	X	X	X	X									
6	MrM-MW-9R	6-2-09	1450	7-W	X	X	X	X	X									
7	MrM-LS-02	6-2-09	1755	6-W		X	X		X		X							
8	MrM-MW-5	6-3-09	750	7-W	X	X	X	X	X									
9	MrM-Pond	6-4-09	1805	3-W						X								
10	MrM-DW-VOC	6-5-09	830	3-W						X								

SEE ATTACHED

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Martin Van Oort	6-5-09 1205	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client: _____	Lab Disposal: X		**Received by Laboratory:** Roxanne Lewis	Date/Time: 6-5-09 12:09	Signature: [signature]

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Water Level Measurement Form

Site Name: Master M. Date: 1-21-09

Personnel: Joe Blaine + Martin Van Oort Equipment: Solinst w/ 100ft tape

Field Conditions: Partly cloudy, 40's

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-1	8:15	18.85'	4144		TD 23.575
MW-2	8:32	Dry	4168		TD 22.6
MW-7	8:40	Dry	4174		TD 20.17 3" H2O
MW-10	907	31.25	4183		TD 50.25
MW-OW1	933	32.65	4224		TD 78.5
MW-OW2	940	41.05	4231		TD 50.03
MW-6	1000		4297		101.5 no H2O no bottom
MW5	10:15		4293		101.5 no H2O no Bottom
~~MW-4~~	~~11:00~~	~~6.71~~			

Notes: Reference elevation from GPS. Could not locate MW-9 & MW-4.

Note: MW-OW2 was later identified as MW-8R. MVO - 2/17/08

Signature:

Page 1 of 1

Water Quality Meter Calibration Form

Site Name: Mister M Date: 1-21-09

Personnel: Joe Blaine & Martin Van Oort

Field Conditions: Partly Cloudy & 40's, snow cover

Meter Model: Horiba U-10

Parameters/Sensors: pH, Cond, Turb, DO, Temp

			Pre-Calibration Reading		Post-Calibration Reading	
Parameter	Units	Standard Value	Time	Value	Time	Value
pH	std.	4.0	12:37	3.95	12:45	3.99
Cond.	mS/cm	4.6	↓	4.78	↓	4.57
Turb	NTU	0		<10		0
DO	mg/l	0		0.09		0.09

Notes: DO Sensor may not be working properly

Signature: [illegible]

Water Quality Meter Calibration Form

Site Name _____ Date _____

Personnel _____

Field Conditions _____

Meter Model _____

Parameters Sampled _____

Parameter	Units	Standard Value	Pre Calibration Reading		Post Calibration Reading	
			Time	Value	Time	Value
pH	s.u.	4.0	13:27	3.95	13:43	3.92
Cond	mS/cm	1.4		1.38		1.37
Temp	°C	0		<0.0		0
DO	mg/L	0		0.07		0.3

Notes _____

Signature _____ Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mistr M Sample Location: MW-HW

Personnel: Joe Blaine + Martin Van Oort Sample ID: Mr-M-MW-HW

Date: 1-21-09 Field Conditions: Mostly Sunny, 40's

Condition of Well: frost free spigot next to house

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed pump Pump Depth: — Start Time: 12:54

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
12:56	5			5.78	.608	4.3		.48	<10	
1:01	15			6.17	.609	6.1		.38	<10	
1:04	20			6.39	.606	7.1		.33	<10	
1:08	25			6.57	.611	7.1		.3	<10	
1:10	30			6.69	.610	7.3		.29	<10	

Sample Time: 1315 Sampling Method: Spigot

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 45.1 Final Depth to Water: — End Time: 1324

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sample Location: [illegible]

Personnel: [illegible] Sample ID: [illegible]

Date: [illegible] Field Conditions: [illegible]

Condition of Well: [illegible]

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Pump Equipment: [illegible] Pump Depth: — Start Time: [illegible]

Time - Vol (gal)	Rate (gpm)	DTW (feet)	pH (std)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
[illegible]			[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	

Sample Time: [illegible] Sampling Method: [illegible]

Containers	Preservative	Parameters	Comments
2 x 40ml Vial	HCl	VOCs	
250ml Plastic	NaOH	Cyanide	
250ml Plastic	HNO_3	Dissolved Metals	
250ml Plastic	H_2SO_4	Alkalinity, COD	
250ml Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: [illegible] Final Depth to Water: — End Time: [illegible]

Notes:

Sampler Signature:

Page [illegible] of [illegible]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Sample Location: MW-OW1

Personnel: Martin Van Oort & Joe Blume Sample ID: MrM-MW-OW1

Date: 1-21-09 Field Conditions: partly sunny, 40°s

Condition of Well: No steel cover, not labeled, cap not screw on variety

Depth to Water (DTW): 32.65 Total Depth of Well (TD): 78.5

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 29.9 Three Well Volumes: 89.8

Purge Equipment: Disp. Bailer Pump Depth: — Start Time: 1552

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1553	0.5			7.53	0.506	8.3		0.07	67	
1603	3.0			7.50	0.503	8.3		0.02	<9	Yellowish water
1613	6.2			7.48	0.505	8.9		0.03	23	
1623	9.0			7.47	0.507	8.7		0.04	28	
1631	12.0			7.48	0.507	8.5		0.05	2	
1638	14.5			7.48	0.507	8.5		0.05	1	
1645	18			7.46	0.506	8.4		0.08	7	

Sample Time: 1648 Sampling Method: Disp. Bailer

Containers	Preservative	Parameters	Comments
√ 2 x 40mL Vial	HCl	VOCs	
√ 250mL Plastic	NaOH	Cyanide	
√ 250mL Plastic	HNO_3	Dissolved Metals	
√ 250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
√ 250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 18 Final Depth to Water: — End Time: 1702

Notes: While purging fished old bailer out of well.

Sampler Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Sample Location: MW-10

Personnel: Martin Van Doort & Joe Blaine Sample ID: M-M-MW-10

Date: 1-21-09 Field Conditions: sunny, ~50°

Condition of Well: good, not labeled

Depth to Water (DTW): 31.25 Total Depth of Well (TD): 50.25

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 3.1 Three Well Volumes: 9.29

Purge Equipment: Disp. Bailer Pump Depth: — Start Time: 1500

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1500				7.59	1.04	8.0		0.02	<10	
1508	1.7			7.32	1.05	8.0		0.07	540	
1515	3.4			7.28	1.05	8.1		0.07	508	
1524	6.2			7.24	1.06	8.3		0.07	284	
1540	8.8			7.21	1.06	8.4		0.08	>999	
1542										Dry at 8.0 gal

Sample Time: 915 1-22-09 Sampling Method: Disp. Bailer

Containers	Preservative	Parameters	Comments
✓2 x 40mL Vial	HCl	VOCs	
✓250mL Plastic	NaOH	Cyanide	
✓250mL Plastic	HNO_3	Dissolved Metals	
✓250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
✓250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: ~9.5 Final Depth to Water: — End Time: 930

Notes: Purged dry after 9 gallons, let recover overnight

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Sample Location: MW-1

Personnel: Joe Blaine + Martin Van Oort Sample ID: MrM-MW-1

Date: 1-21-09 Field Conditions: Sunny ~50°, snow cover

Condition of Well: good, cap not screw on variety, not labeled

Depth to Water (DTW): 18.85 Total Depth of Well (TD): 23.875

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 0.82 Three Well Volumes: 2.46

Purge Equipment: Disp Bailer Pump Depth: — Start Time: 1428

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1428				6.81	0.615	9.6		0.07	<10	
1434	0.35			6.94	0.598	9.6		0.08	75	Lt Brown water
1438	0.75			6.92	0.613	9.2		0.07	73	
1442										Dry at 1 gal

Sample Time: 936 1-22-09 Sampling Method: Disp. Bailer

Containers	Preservative	Parameters	Comments
✓ 2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	not enough water
✓ 250mL Plastic	HNO_3	Dissolved Metals	
✓ 250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
✓ 250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: ~1.5 gal Final Depth to Water: — End Time: 1000

Notes: Purged dry after 1 gal, let recover overnight

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sample Location: MW-1

Personnel: [illegible] Sample ID: [illegible]-MW-1

Date: 1-21-09 Field Conditions: [illegible]

Condition of Well: [illegible]

Depth to Water (DTW): [illegible] Total Depth of Well (TD): [illegible]

Well Diameter: 2" Well Diameter Constant (C): [illegible] 4" = 0.653 6" = [illegible]

One Well Volume (gallons) = (TD - DTW) x C [illegible] Three Well Volumes: [illegible]

Purge Equipment: [illegible] Purge Begin: — Start Time: [illegible]

Time	Vol (gal)	Flow (gpm)	DTW (feet)	pH (su)	SC (µS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
[illegible]				[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
[illegible]										

Sample Time: [illegible] Sampling Method: [illegible]

Containers	Preservative	Parameters	Comments
2 x 40ml Vial	HCl	VOCs	
250ml Plastic	HNO_3	Cations	[illegible]
250ml Plastic	HNO_3	Dissolved Metals	
250ml Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250ml Plastic	None	Sulfate, Chloride, pH, SC	

Total Volume Purged: [illegible] Final Depth to Water: — End Time: [illegible]

Notes: [illegible]

Sampler Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Sample Location: MW-5

Personnel: Joe Blaine & Martin Van Oort Sample ID: M-M-MW-5

Date: 1-22-09 Field Conditions: Cold & windy, cloudy

Condition of Well: good, not labeled, no cap

Depth to Water (DTW): ~2ft of water Total Depth of Well (TD): unknown (too deep for tape)

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Disp. Bailer Pump Depth: — Start Time: 830

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments

Sample Time: — Sampling Method: —

Containers	Preservative	Parameters	Comments
~~2 x 40mL Vial~~	~~HCl~~	~~VOCs~~	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
~~250mL Plastic~~	~~HNO_3~~	~~Dissolved Metals~~	
~~250mL Plastic~~	~~H_2SO_4~~	~~Nitrate+Nitrite, COD~~	
~~250mL Plastic~~	~~none~~	~~Sulfate, Chloride, pH, SC~~	

Total Volume Purged: ~0.25 gal Final Depth to Water: dry End Time: 845

Notes: Not enough water to sample.

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: M Site - M

Sample Location: M W - 5

Personnel: Joe Pilsner & Mark Wa. Oa-2

Sample ID: M-M - MW-5

Date: 1-22-09

Field Conditions: Cold & windy, Clear sky

Condition of Well: Good, no lock but, has cap

Depth to Water (DTW): no LNAPL or water

Total Depth of Well (TD): Unknown (ft bgs)

Well Diameter: 2 in

Well Casing Volume Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C

Times Well Volumes: —

Purge Equipment: Peristaltic

Purge Completed: —

Start Time: 830

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (s.u.)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments

Sample Type: —

Sampling Method: —

Containers	Preservative	Parameters	Comments
2 x 40 mL Vial	HCl	BTEX	
500 mL Plastic	None	Cyanide	
500 mL Plastic	NaOH	Phenols	
2 x 40 mL Vial	HCl	Dissolved Metals	
250 mL Plastic	None	Nitrate/Nitrite, COD	
		Sulfate, Chloride, pH, SG	

Total Volume Purged: 0.27 gal

Final Depth to Water: dry

End time: 834

Notes: Not enough water to sample.

Sample Signature: MAK

Page 1 of 1

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ Solid Waste	Mister M Landfill	State: MT	Yes ☒ No ☐
Report Mail Address:	**Contact Name:**	**Phone/Fax:**	**Email:**
PO Box 200901, Helena, MT 59620	Martin Van Dort	406-444-2802	mvandort@mt.gov
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
Same	Same		

Sampler: (Please Print) Martin Van Dort & Joe Blaine

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- ☐ DW
- ☐ GSA
- ☐ POTW/WWTP
- ☒ State: DEQ Solid Waste
- ☐ Other: Table 1
- ☐ A2LA
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Table 1 Dichlorodifluoromethane

Shipped by: Hand

Cooler ID(s):

Receipt Temp: 0.6 °C

On Ice: Yes No

Custody Seal Y N

Intact Y N

Signature Match Y N

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	VOCs *	Dissolved Metals	Cyanide	SO4, Cl, F, pH, SC	Nitrate+Nitrite, COD					SEE ATTACHED	Normal Turnaround (TAT)	RUSH
1	M-M-MW-OW1	1-21-09	1648	Water	X	X	X	X	X						X	
2	M-M-MW-10	1-22-09	915	↓	X	X	X	X	X						X	
3	M-M-MW-1	1-22-09	936	↓	X	X		X	X						X	
4	M-M-EB	1-22-09	1040	↓	X	X	X	X	X						X	
5	M-M-MW-HW	1-21-09	1315	↓	X	X	X	X	X						X	
6	Trip Blank	—	—	↓	X										X	
7																
8																
9																
10																

LABORATORY USE ONLY

Custody Record MUST be Signed

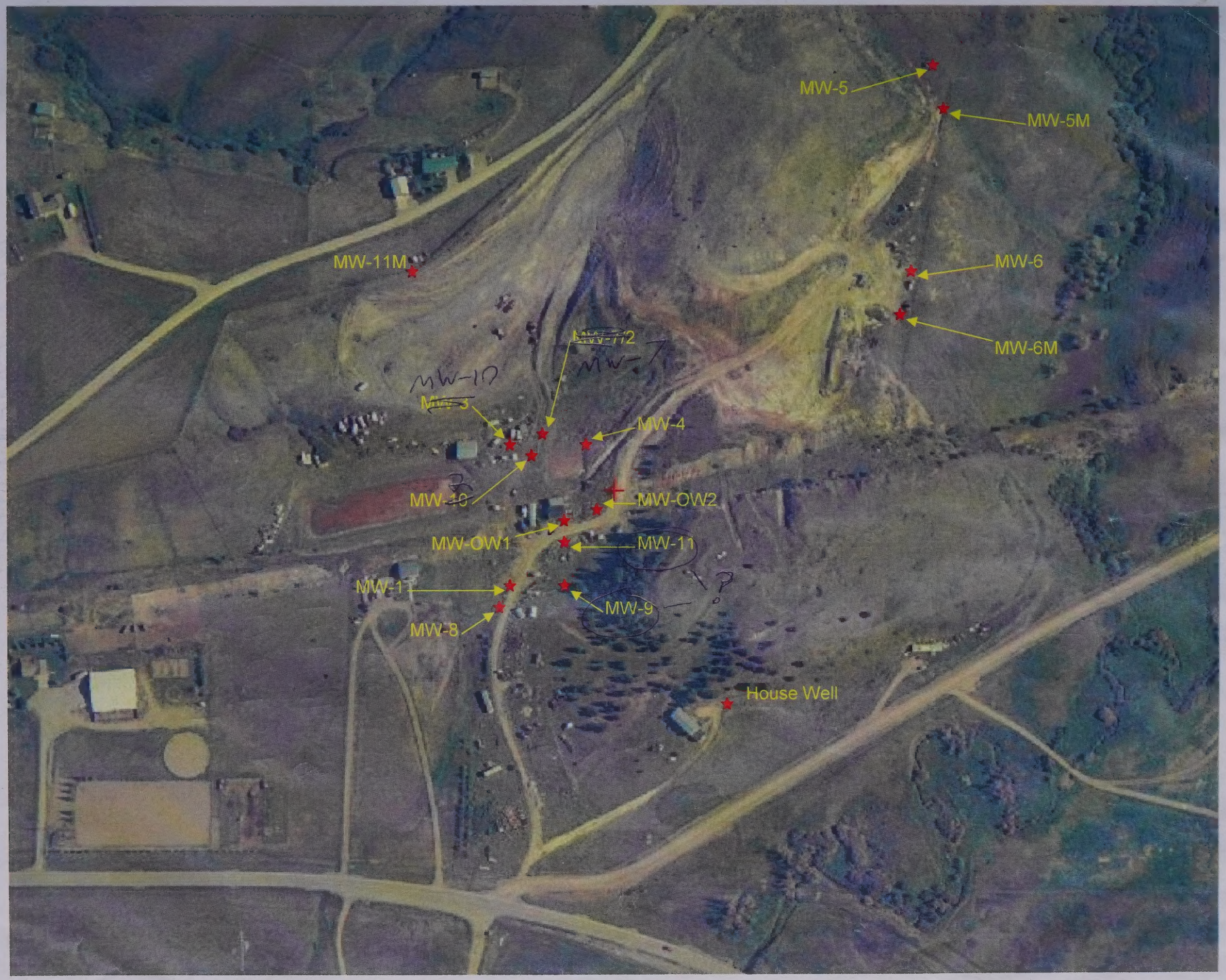
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Martin Van Dort	1-22-09 1502	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client: _____ Lab Disposal: X			Received by Laboratory: Kor Hom / [illegible]	Date/Time: 1-22-09 15:02	Signature: [signature]

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

GPS Coordinates

MW-3	Acc 12ft	6 sat	N 47.07327 W 109.34512
MW-1	Acc 78	6 sat	N 47.07331 W 109.34508
MW-2	20ft	7 sat	N 47.07417 W 109.34476
MW-7	20ft	8 sat	N 47.07424 W 109.34474
MW-10	20ft	8 sat	N 47.07423 W 109.34476
MW-11M EI 4251	21	7	N 47.07517 W 109.34583
MW-OW1	22	7	N 47.07372 W 109.34477
MW-OW2	23	6	N 47.07380 W 109.34421
MW-6m	19	8	N 47.07498 W 109.34152
MW-6	14	8	N 47.07523 W 109.34138
MW-5M 4293	20	8	N 47.07621 W 109.34114
MW-5	6	10	N 47.07647 W 109.34123


MW-5
MW-5M
MW-6
MW-6M
MW-11M
MW-12
MW-7
MW-10
MW-3
MW-4
MW-10
MW-OW2
MW-OW1
MW-11
MW-1
MW-9
MW-8
House Well

Methane Monitoring Form

Site Name: Mister M Landfill Date: 10/27/09

Personnel: Martin + Joe

Field Conditions: Windy, Partly cloudy, 30's

Meter Model: GFG 450

Calibration Time: Calibrated 10/23 Standard: 50% Pre-Reading: 45.5 Post-Reading: 50.5

Measurement Point	Time	CH_4	O_2	CO	H_2S	Comments
MW-2	10:20 am	0	18.8	0	0	
MW-6M	10:30 am	0	18.7	0	0	
MW-5M	10:40 am	0	10	0	0	
N Meth Vent	10:50 am	0	20.3	0	0	
MW-1	12:00 pm	0	19.4	0	0	

Notes:

Signature: [signature]

Page 1 of 1

Water Quality Meter Calibration Form

Site Name: Mister M Landfill Date: 10/23/09

Personnel: Martin Van Oort

Field Conditions: —

Meter Model: Hanna HI 991301

Parameters/Sensors: pH, EC, Temp, TDS

Parameter	~~mV~~ Units	Standard Value	Pre-Calibration Reading Time	Pre-Calibration Reading Value	Post-Calibration Reading Time	Post-Calibration Reading Value
pH	~~mV~~ std	7.01	1250	5.65	1255	7.08
pH	std	4.01	1250	3.77	1255	4.07
Cond.	mS/cm	12.88	1255	12.73	1300	12.88

Notes:

Signature:

Page ___ of ___

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-OW

Personnel: Martin, Joe, & Bob Sample ID: MrMMW-OW

Date: 10/26/09 Field Conditions: Windy, ~45°

Condition of Well: No steel casing

Depth to Water (DTW): 33.40 Total Depth of Well (TD):

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Bailer Pump Depth: — Start Time: 1225

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (~~°C~~) °F	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1227	0.25			7.57	0.96	49.4				
1235	2.5			7.34	0.73	48.8				
1244	5.0			7.51	0.70	47.6				
1252	7.5			7.49	0.68	47.4				
1302	10			7.68	0.66	47.6				
1313	12.5			7.75	0.67	47.3				

Sample Time: 1330 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 15 Final Depth to Water: End Time:

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin, Joe, & Bob Sample ID: MrM-MW-9R

Date: 10/26/09 Field Conditions: windy, mostly cloudy, 40's

Condition of Well: Good

Depth to Water (DTW): 41.46 Total Depth of Well (TD): ~50.5

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 1.47 Three Well Volumes: 4.42

Purge Equipment: Bailer Pump Depth: — Start Time: 1400

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1400	1.0			7.00	1.06	50.1				
1405	1.75			6.76	0.93	48.6				
1408	2.6			6.80	0.94	47.8				
1413	3.75			6.79	0.99	47.5				Dry

Sample Time: 10/27/09 830 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 4 gal Final Depth to Water: — End Time:

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Motor Man Lot 11

Sample Location: MW-5R

Beginning: Motor Tech 4 Lab

Sampled By: MW-MW-5R

Date: 12/12/89

Field Conditions: Warm, partly cloudy, 40°F

Condition of Well: Good

Depth to Water (DTW): 11.46

Total Depth in Well (TD): 20.5

Well Diameter: 2"

Well Diameter Conversion (D): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) (TD - DTW) x D: 1.42

Three Well Volumes: 4.27

Purge Equipment: Grab

Purge Begun: —

Start Time: 1400

Time	Vol. Purged (gal)	Flow (gpm)	DTW (feet)	pH (std)	SC (mS/cm)	Temp (°C)	DO2 (mg/L)	(V) (mg/L)	Turb (NTU)	Comments
1400	1.0			7.05	1.06	20.1				
1405	1.25			6.75	0.97	19.6				
1410	2.5			6.51	0.951	20.3				
1415	3.75			6.72	0.99	19.5				2.X

Sample Time: 1420

Sampling Method: Grab

Container	Preservative	Parameters	Comments
2x amber vials	HCl	VOCs	
2x clear vials	HCl	Cyanide	
2x clear vials	HNO_3	Dissolved Metals	
2x clear vials	H_2SO_4	Hydrocarbons, COD	
2x clear vials	None	Sulfate, Chloride, pH, SC	

Total Volume Purged: 4.3 gal

Flow Direction to Water:

Flow Time:

Notes:

Sample Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-10R

Personnel: Martin & Joe Sample ID: MrM-MW-10R

Date: 10/26/09 Field Conditions: Cloudy, 40's

Condition of Well: Good

Depth to Water (DTW): 31.14 Total Depth of Well (TD): 50.5

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 3.16 Three Well Volumes: 9.47

Purge Equipment: Bailer Pump Depth: — Start Time: 1425

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1430	1			7.55	1.11	49.2				
1437	2			7.16	1.04	46.9				
1445	3.5			7.16	1.05	47.2				
1454	5.5			7.18	1.05	47.2				
1500	8.0			6.98	1.07	47.4				Dry

Sample Time: 10/27/09 900 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 9 gal Final Depth to Water: End Time:

Notes: Duplicate MrM-MW-10R-DUP @ 900

Field Blank MrM-MW-FB @ 940

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Chevron Lawrenceville Sample Location: MW-10R

Personnel: Chevron & Tetra Sample ID: MW-10R

Date: 10/22/09 Pre-Conditions: Clear, 44°F

Condition of Well: Good

Static Water (DTW): 31.64 Total Depth of Well (TD): 50.5

Well Diameter: 2" Well Diameter Conversion (C): 2" = 0.163 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C Three Well Volumes: 5.97

Purge Equipment: Bailer Pump Depth: — Start Time: 14:25

Time	Vol. (gal)	Flow (L/min)	DTW (feet)	pH (su)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
14:30	1			7.55	1.11	14.3				
14:35	3			7.46	1.09	14.3				
14:40	5			7.16	1.05	14.3				
14:45	5.5			7.10	1.05	14.3				
15:00	6.0			6.78	1.05	14.3				Dry

Sample Time: 1500 Sampling Method: Bailer

Constituents	Preservative	Parameters	Comments
2 x 40-mL Vial	HCl	NO3-N	
2 x Amber Bottle	MeOH	Cl-, Br-	
2 x Amber Bottle	HNO3	Dissolved Metals	
2 x Amber Bottle	H2SO4	Alkalinity, VOC	
2 x Amber Bottle	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 2 gal Flow Cooler to Water: End Time:

Notes: Replicate MW-10R - 1500 @ 1500

Field Blank MW-10R - 1510 @ 1510

Sample Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mester M. Landfill Sample Location: MW-HW

Personnel: Martin, Joe, Bob Sample ID: MrM-MW-HW

Date: 10/26/09 Field Conditions: Windy, cloudy ~40°

Condition of Well: —

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: Three Well Volumes:

Purge Equipment: Installed Pump Pump Depth: — Start Time: 1610

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (ºC)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1610	5			7.07	0.78	52.1				
1615	20			7.18	0.77	50.3				
1617	30			7.18	0.77	50.1				
1619	40			7.21	0.80	49.6				

Sample Time: 1630 Sampling Method: Frost free spigot near house

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 45 Final Depth to Water: — End Time:

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mader M Lake Sampling Location: MW-HW

Personnel: Mader, Tre, B.B. Sample ID: MW-HW

Date: 10/12/09 Field Conditions: Windy, clear, 40°F

Condition of Well:

Depth to Water (DTW): Total Depth of Well (TD):

Well Diameter: Well Diameter Conversion (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: Three Well Volumes:

Purge Equipment: Teflon Bailer Purge Begin: — Start Time: 1610

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (s.u.)	SC (umhos/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1610	5			7.01	32.23	5.1				
1615	20			7.10	0.224	5.0				
1617	10			7.13	0.227	5.1				
1619	40			7.21	0.18	15.4				

Sample Time: 1630 Sampling Method: Teflon Bailer Sampling Order: 1, 2, 3

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
2 x 0mL Plastic	HNO3	Cations	
250mL Plastic	NaOH	Cyanide, Metals	
500mL Plastic	H2SO4	Nitrate/Nitrite, BOD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 75 Final Depth to Water: — End Time:

Notes:

Sampler Signature: [illegible]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-5

Personnel: Matt, Joe, Bob Sample ID: —

Date: 10/26/09 Field Conditions: Windy 40's

Condition of Well: Good

Depth to Water (DTW): 103.12 Total Depth of Well (TD): ~105

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: _____ Three Well Volumes: _____

Purge Equipment: _____ Pump Depth: _____ Start Time: _____

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments

Sample Time: _____ Sampling Method: _____

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: _____ Final Depth to Water: _____ End Time: _____

Notes: No Sample - too little water

Sampler Signature: [illegible]

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ Solid Waste	Mister M Landfill	State: MT	Yes ☒ No ☐

Report Mail Address:	Contact Name:	Phone/Fax:	Email:	Sampler: (Please Print)
1520 East Sixth Ave, Helena, MT 59620	Martin Van Oort	444-2802	mvanoort@mt.gov	Martin Van Oort

Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:
Same	Same		4814

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- ☐ DW
- ☐ GSA
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☐ A2LA
- ☐ EDD/EDT (Electronic Data)
- Format: _____
- ☐ LEVEL IV
- ☐ NELAC

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Landfill Sample list. * Green topped bottles unpres. no white topped bottles included. Please call re Cyanide analyses.

Shipped by:

Cooler ID(s):

Receipt Temp 2.2 °C

On Ice: Yes No

Custody Seal Y N

Bottles/Coolers B C

Intact Y N

Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	Dissolved Metals	Nitrate/Nitrite, COD	pH, Cond, Anions *	8260 VOCs							SEE ATTACHED	Normal Turnaround (TAT)
1 MrM-MW-OW	10/26/09	1330	6W	X	X	X	X								
2 MrM-MW-HW	10/26/09	1630	6W	X	X	X	X								
3 MrM-MW-10R	10/27/09	900	6W	X	X	X	X								
4 MrM-MW-10R-DUP	10/27/09	900	6W	X	X	X	X								
5 MrM-MW-9R	10/27/09	830	6W	X	X	X	X								
6 MrM-MW-FB	10/27/09	940	6W	X	X	X	X								
7 Trip Blank							X								
8															
9															
10															

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Martin Van Oort	10/28/09 10:05	[signature]			

Received by Laboratory:	Date/Time:	Signature:
[signature]	10/28/09 10:08	[signature]

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Water Level Measurement Form

Site Name: Master M Date: 6-21-10

Personnel: Master Van Ooy Equipment: Slope indicator 300 FT

Field Conditions: Mostly cloudy, breezy, sprinkles

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-6	1137	93.51			
MW-5	1154	95.44			
MW-9R	1220	20.85			
MW-OW	1223	23.60			
MW-7	1229	6.93			
MW-8	1258	2.82			water flowing around wall at surface.

Notes:

Signature: [signature]

Page 1 of 1

Methane Monitoring Form

Site Name: Mister M

Date: 6-21-10

Personnel: Martin VanDoit

Field Conditions: Mostly cloudy, breezy, sprinkles

Meter Model: GFG-450

Calibration
Time: _____ Standard: _____ Pre-Reading: _____ Post-Reading: _____

Measurement Point	Time	CH_4	O_2	CO	H_2S	Comments
MW-6M	1131	0	16.6	0	0	
MW-5M	1145	3.0 *	3.7	0	0	
North vent	1201	6.0	19.6	0	0	
MW-2	1235	0	10.8	0	0	

Notes: * MW-5M: low oxygen (<10%) prevented LEL sensor from working
LEL reading likely higher than recorded

Signature: [signature]

Page 1 of 1

Water Level Measurement Form

Site Name: Mister M Landfill Date: 2/26/10

Personnel: Martin Van Oort Equipment: Slope Indicator, 300' meter

Field Conditions: Sunny 30's to 40's, calm, snow cover, drifts to 2'

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-8	1102	18.27			
MW-9W	1114	34.49			
MW-9R	1118	42.13			
MW-7R	1131	20.25			
MW-10R	1138	NM			Well broken or obstructed at 4'
MW-4	1150	Dry			
MW-6	1216	104.08			
MW-5	1244	102.91			

Notes:

Signature:

Page ___ of ___

Water Level Measurement Form

Site Name: Water Level Date: 2/26/19

Personnel: Mike Van Dort Equipment: Slope Indicator, 300' well-

Field Conditions: Snow 30's to 40's, sleet, snow cover, depth to 2'

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-3	1102	18.27			
MW-10W	1114	34.49			
MW-9R	1118	42.15			
MW-7S	1121	20.25			
MW-10S	1138	NM			
MW-4	1150	8.-			
MW-2	1210	104.03			
MW-5	1224	101.31			

Will [illegible] 2 [illegible]

Notes:

Signature:

Methane Monitoring Form

Site Name: Mister M Landfill Date: 2/26/10

Personnel: Martin Van Oort

Field Conditions: Sunny 30's to 40's, snow cover, drifts to 2', calm

Meter Model: GFG-6450

Calibration 2/26/10
Time: 1050 Standard: 50 Pre-Reading: 53.5 Post-Reading: 50.5

Measurement Point	Time	CH_4	O_2	CO	H_2S	Comments
MW-1	1105	0	14.4	0	0	
MW-2	1125	0	17.4	0	0	
MW-6M	1209	0	16.5	0	0	
MW-5M	1228	>100	2.1	0	0	
"	1235	>100	2.1	0	0.4	
South Vent	1302	53.5	12.1	0	0	Ambient = 25% LEL
North Vent	1309	83.0	18.0	0	0	Ambient = 24% LEL

Notes: After Over Range reading at MW-5M CH_4 sensor did not return to 0.

Calibrated 2/23/10			2/26/10	
Calibration	Pre	Post	Standard	Bump test
O_2	18.8	18.7	18.5	18.7
LEL	48.5	50.5	50	53.5
H_2S	18.2	20.2	20	18.8
CO	190	201	200	187

Signature:

Page ___ of ___

Methane Monitoring Form

Site Name: Mader M Landfill Date: 2/26/10

Personnel: Mader, V.; Oat

Field Conditions: Sunny 30's to 40's, snow cover, drifts to 2' deep

Meter Model: GFG-GM50

Calibration Time: 1125 Standard: 50 Pre-Reading: 51.5 Post Reading: 50.5

Measurement Point	Time	CH4	O2	CO2	H2S	Comments
MW-1	1105	0	14.4	0	0	
MW-2	1125	0	16.4	0	0	
MW-6M	1209	0	16.5	0	0	
MW-5M	1228	2100	2.1	0	0	
"	1255	2100	2.1	0	0.4	
Snow Vent	1302	525	12.1	0	0	Ambient = 25x LEL
Mader Vent	1305	850+	18.0	0	0	Ambient = 24x LEL

Notes: After Our Snow removed at MW-5M/MW-6M most readings to 0

Calibration Log

Date	Time	Gas	Pre-Cal	Post-Cal	Bump Test
		O_2	18.8	18.7	18.1
		LEL	50.5	50	50.5
		H_2S	20.2	20	19.8
		CO	190	200	198

Signature: Page ___ of ___

Methane Monitoring Form

Site Name: Mister M Landfill Date: 10/25/10

Personnel: Martin Van Oort

Field Conditions: Windy, snow showers, 40's

Meter Model: GFG

Calibration
Time: _____ Standard: _____ Pre-Reading: _____ Post-Reading: _____

Measurement Point	Time	CH_4	O_2	CO	H_2S	Comments
MW-5M	1047	>0.5	4.0	0	0	No LEL below 10% O_2
MW-6M	1102	0	17.1	0	0	
South Vent	1114	0	20.2	0	0	
North Vent	1117	0	20.1	0	0	
MW-2	1142	0	17.7	0	0	
MW-1	1155	0	16.5	0	0	

Notes:

Signature: [signature]

Page 1 of 1

Methane Monitoring Form

Site Name: Mid-Mountain Landfill Date: 10/21/10

Personnel: Mike Vaughn

Field Conditions: Windy, snow showers, 40's

Meter Model: GFG

Calibration
Time: _____ Standard: _____ Pre-Reading: _____ Post-Reading: _____

Measurement Point	Time	CH_4	O_2	CO	H_2S	Comments
MW-3M	1037	20.5	14.0	0	0	Pump Lost Low 10%LEL
MW-1M	1102	0	17.1	0	0	
Sump Vent	1111	0	20.2	0	0	
MW-3M-V	1117	0	20.1	0	0	
MW-2	1121	0	17.7	0	0	
MW-1	1125	0	18.1	0	0	

Notes:

Comments: All OK

Page 1 of 1

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ	Mother M Landfill	State: MT	Yes ☒ No ☐
Report Mail Address:	**Contact Name:** / **Phone/Fax:**	**Email:**	**Sampler: (Please Print)**
PO Box 200901	Martin Van Oort 444-2802	mvanoort@mt.gov	
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
Same	Same		6806

Special Report/Formats:

- ☐ DW
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

SEE ATTACHED

Standard Turnaround (TAT)

RUSH — Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments:

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Dissolved Metals	Nitrate/Nitrite	Sulfate, Cl⁻, pH, Cond	8260 VOCs								
1 MrM-MW-OW	10/25/10	1705	W	X	X	X	X							X	
2 MrM-MW-9R	10/26/10	825	↓	X	X	X	X							↓	
3 MrM-MW-11	10/26/10	1200		X	X	X	X								
4 MrM-MW-12	10/27/10	910		X	X	X	X								
5 MrM-MW-12-DUP	10/27/10	915		X	X	X	X								
6 Trip Blank	10/25/10	—					X								
7															
8															
9															
10															

LABORATORY USE ONLY

Shipped by: Hand del.
Cooler ID(s): Y
Receipt Temp: 5.6 °C
On Ice: Y N
Custody Seal: On Bottle Y N; On Cooler Y N
Intact Y N
Signature Match Y N

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Martin Van Oort	10/27/10 11:16	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client: _____ Lab Disposal: _____			**Received by Laboratory:** Tracy Lovaas	Date/Time: 10/27/10 11:16	Signature: [signature]

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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BEFORE COMPLETING THE ATTACHED CHAIN OF CUSTODY(COC) FORM:

- If you wish to request RUSH Turn Around Time (TAT), contact the laboratory PRIOR to sample submittal to confirm that RUSH analysis is available for your request. Verify date required. Additional charges will apply for RUSH Turn Around Time (TAT).
- Please contact ELI PRIOR to sample submittal if services are other than standard.
- It is important to complete the Chain Of Custody (COC) form with as much detailed information as possible. This information is required so that the appropriate analytical services, reporting and invoicing can be provided for your project.

Quote Number or Bottle Order Number:
ELI provides quotes for project specific sampling requirements. It is very important to provide the ELI quote number or bottle order number to assure that you receive the quoted pricing for your project.

Select the types of services you need:
If services other than standard are required for your analytical project, contact ELI PRIOR to sample submittal.

Sample Disposal:
ELI, when applicable, will dispose of all non-hazardous samples. Routinely, hazardous samples will be returned to the client. If requested, ELI will dispose of hazardous samples at client's expense.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT (Provide as much information as possible.)

Company Name: ABC Corporation	Project Name, PWS, Permit, Etc.: Rockport Reclamation Project	Sample Origin State: Montana	EPA/State Compliance: Yes ☐ No ☒
Report Mail Address: 1234 Main St, Anywhere, MT 59101	Contact Name: John Smith; Phone/Fax: 605-444-1234	Email: anyone@email.com	Sampler: (Please Print) SAME
Invoice Address: P.O. Box 222, City ST 11111	Invoice Contact & Phone: Jane Doe 406-555-1212	Purchase Order: A98765	Quote/Bottle Order: HO1-172

Special Report/Formats:
☐ DW ☐ POTW/WWTP ☐ State: ____ ☐ Other: ____
☐ EDD/EDT (Electronic Data) Format: ____ ☐ LEVEL IV ☐ NELAC

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW Air Water Soils/Solids Vegetation Biossey Other DW - Drinking Water)	Radium 226	Ammonia	Nitrate	SEE ATTACHED	Standard Turnaround (TAT)	RUSH
1 MW-1	08/01/09	13:10	3-W	X	X	X			X
2 Soil From Pad	08/02/09	09:47	1-S	X	X	X			X
3									
4									
5									
6									
7									
8									
9									
10									

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments: Spoke to Joe RE: Rush TAT

Shipped by: ____ Cooler ID(s): ____ Receipt Temp ____ °C On Ice: Y N Custody Seal On Cooler Y N Intact Y N Signature Match Y N

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
John Smith	08/09/09 14:15	John Smith	Mary Cook	08/09/09 14:15	Mary Cook
Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
			Received by Laboratory:	Date/Time	Signature

Sample Disposal: Return to Client ____ Lab Disposal ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Example

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-OW

Personnel: Martin Van Oort Sample ID: MrM-MW-OW

Date: 10/25/10 Field Conditions: Windy, cloudy, 40's

Condition of Well: No outer casing

Depth to Water (DTW): 27.93 Total Depth of Well (TD): ?

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: ? Three Well Volumes: ?

Purge Equipment: Bailer Pump Depth: — Start Time: 1434

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1439	1			7.24	0.63	46.8				
1510	5			7.25	0.63	46.1				
1608	10			7.26	0.63	46.0				
1700	15			7.22	0.63	46.2				

Sample Time: 1725 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 15 Final Depth to Water: — End Time: 1720

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin Van Oort Sample ID: MrM-MW-9R

Date: 10/25/10 Field Conditions: Windy, snow/rain mix, 40's

Condition of Well: Good

Depth to Water (DTW): 40.14 Total Depth of Well (TD): 50.49

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 1.69 Three Well Volumes: 5.06

Purge Equipment: Bailer Pump Depth: – Start Time: 1315

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1318	1			7.05	0.95	45.9				
1324	1.6			6.97	0.92	45.5				
1330	2.3			6.85	0.92	45.8				
1337	3.2			6.85	0.93	45.8				
1347	4.8			6.87	0.95	45.6				Dry
10/26 825			40.49							

Sample Time: 825 10/26 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 5.2 gal Final Depth to Water: – End Time: 840

Notes:

Sampler Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mate - Montell Sample Location: MW-2R

Personnel: M. Jones, Van Dyke Sample ID: CM-MW-2R

Date: 10/8/2010 Field Conditions: Windy, Sunny, Low 60's, High 70's

Condition of Well: Good

Depth to Water (DTW): 40.17 Total Depth of Well (TD): 50.13

Well Diameter: 2" Well Diameter Conversion (ft): 2" = 0.163 4" = 0.653 6" = 1.469

Calculated Water Column (gallons) = (TD - DTW) x C: 1.67 Three WV Volumes: 5.04

Purge Equipment: Bailer Purge Begin: — Purge End Time: 1315

Time (24 hr)	Vol. Purged (gal)	Rate (gpm)	DTW (feet)	pH (S.U.)	SC (umhos/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1315	1			7.03	0.27	17.5				
1320	2			6.72	0.27	16.5				
1325	3			6.87	0.27	16.5				
1327	4			6.85	0.27	16.5				
1327	4.5			6.82	0.27	16.5				Dry
0945			47.45							

Sampling Time: 1315 Sampling Method: Bailer

Container	Preservative	Test Name	Comments
3 x 40ml Vial	HCl	VOC's	
2x500ml Plastic	None	Cyanide	
2x500ml Plastic	HNO3	Conventional Metals	
2x500ml Plastic	H2SO4	Nitrate, COD	
2x500ml Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 5.5 L Final Depth to Water: 7 End Time: 1320

Notes:

Sample Signature: MJ MW

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-11

Personnel: Martin Van Oort Sample ID: MrM-MW-11

Date: 10/26/10 Field Conditions: Snow, wind, 30's

Condition of Well: New

Depth to Water (DTW): 32.45 Total Depth of Well (TD): 82.89

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 8.22 Three Well Volumes: 24.66

Purge Equipment: Bailer Pump Depth: — Start Time: 920

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
926	0.9			7.22	0.67	45.1				
958	6			7.19	0.63	45.3				
1025	11			7.12	0.64	46.4				
1059	16			7.16	0.63	46.9				
1128	21			7.13	0.64	46.5				
1152	25			7.13	0.63	46.1				

Sample Time: 1200 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 26 Final Depth to Water: — End Time: 1215

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mid-M Landfill Sampling Location: MW-11

Personnel: Mark Van Oort Sample ID: MM-MW-11

Date: 10/22/10 Field Conditions: Sunny, Low-70's, 20's

Condition of Well: New

Depth to Water (DTW): 32.45 Total Depth of Well (TD): 82.32

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons)= (TD - DTW) x C: 8.12 Three Well Volumes: 24.46

Pump Equipment: Bailer Pump Depth: — Start Time: 9:20

Time	Vol (gal)	Rate (gpm)	DTW (feet)	pH (SU)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
9:26	0.7			7.32	0.67	14.5				
9:35	6			7.15	0.65	13.7				
9:45	11			7.11	0.67	14.9				
9:52	16			7.15	0.67	14.2				
11:25	21			7.15	0.67	15.5				
11:32	25			7.15	0.63	14.1				

Sample Time: 1200 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40ml Vial	HCl	VOCs	
2x1L Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	None	Sulfate, Chloride, pH, SC	

Total Volume Purged: 26 Final Depth to Water: — End Time: 1215

Notes:

Sampler Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-12

Personnel: Martin Van Dort Sample ID: M-M-MW-12

Date: ~~[illegible]~~ 10/26/10 Field Conditions: Wind, snow, 40's

Condition of Well: New

Depth to Water (DTW): 1.93 Total Depth of Well (TD): 105.28

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 16.85 Three Well Volumes: 50.54

Purge Equipment: Bailer Pump Depth: — Start Time: 1355

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1405	1			6.93	0.69	46.2				
1420	6.5			6.87	0.69	47.4				
1449	16			~~7.44~~	0.67	46.7				
1520	26		MVD	~~7.44~~	0.67	46.5				
1602	36			—	0.68	46.3				
1630	45									Getting dark, finish
10/27 840	Restart Purge									purge & sample 10/27
844	47			7.12	0.67	45.7				
857	51.5			7.00	0.67	45.3				

Sample Time: 910 10/27 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 53 gal Final Depth to Water: — End Time: 935

Notes: pH probe failed, too cold?

Duplicate @ 915 10/27

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: MW- M L.A.D.I.I. Sample Location: MW-12

Personnel: M. L. W. D-F Sample ID: M-M-MW-12

Date: 10/12/10 Purge Completed: 1:00 Sample: 1:05

Condition of Well: Alive

Depth to Water (DTW): 1.25 Total Depth of Well (TD): 105.25

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 16.85 Three Well Volumes: 50.54

Purge Equipment: B.L. Purge Date: — Start Time: 1355

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (s.u.)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1405	1			6.23	0.627	14.2				
1410	6.5			6.27	0.627	14.3				
1415	16			6.26	0.627	14.2				
1420	26			6.27	0.627	14.3				
1425	34				0.627	14.5				
1430	44									
1450	50									
1455	54									
1500	60				0.627	14.5				
1504	64									
1507	515				0.627	14.5				

Sample Time: 1700 Sample Collector: B.L.

Container	Preservative	Analyte	Comments
2 x 40ml Vial	HCl	VOCs	
2 x 1L Amber	None	SVOCs	
2 x 1L Amber	None	Dissolved Metals	
2 x 1L Amber	HNO3	Total Metals	
2 x 1L Amber	None	Anions, Alkalinity, pH, SC	

Total Volume Purged: 535 Final Depth to Water: — End Time: 1535

Notes: pH probe failed, [illegible]

Sampler Signature: [illegible] Page 1 of 1

Water Level Measurement Form

Site Name: Mister M Landfill Date: 10/25/10

Personnel: Martin Van Oort Equipment:

Field Conditions: windy, snow showers, 40's

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-5	1052	98.85			
MW-6	1107	98.03			
MW-9R	1127	40.14			
MW-10W	1132	27.93			
MW-11	1148	32.45			
MW-12	1159	1.93			

Notes:

Signature:

Methane Monitoring Form

Site Name: Master M Landfill Date: 5/23/11

Personnel: Martin VanDort

Field Conditions: Mostly Cloudy 60's, rain showers

Meter Model: GFG 450

Calibration 5/23/11
Time: 1120 Standard: 50% LEL Pre-Reading: 53.5%, Post-Reading: 50.5%,

Measurement Point	Time	% LEL CH_4	O_2	CO	H_2S	Comments
MW-1	1130	0	20.3	0	1.4	H_2S spikes then rdn to 0
MW-2	1140	0	13.5	0	0.4	" " " " "
MW-6M	1235	0	17.4	0	0	
South Vent	1330	0	20.9	0	0	
North Vent	1335	0	20.7	0	0	
MW-5M	1355	0	2.0	0	0	No CH_4 readings below 10% O_2 but none detected during purge or recovery

Notes:

Signature:

Page ___ of ___

Water Level Measurement Form

Site Name: Mister M Landfill Date: 5/23/11

Personnel: Martin Van Dort Equipment: Slope Indicator

Field Conditions: Mostly cloudy, 60's, rain showers

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-6	1245	86.33			
MW-5	1405	88.73			
MW-9R	1420	17.24			
MW-11	1428	28.42			
MW-12	1440	Flowing			
MW-DW	1445	17.01			

Notes:

Signature:

Page ____ of ____

Water Level Measurement Form

Site Name: Mill - M Landfill Date: 8-3-11

Personnel: Mike Yoder Equipment: Slip Tape

Field Conditions: Mostly clear, 70's, 10 mph wind

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-6	1215	24.57			
MW-5	1025	29.27			
MW-9R	1120	12.24			
MW-11	1125	24.42			
MW-12	1130	[illegible]			
MW-5M	1135	12.01			

Notes:

Signature:

Water Quality Meter Calibration Form

Site Name: Mistic M Landfill Date: 5/23/11

Personnel: Martin Van Oort

Field Conditions: Raining

Meter Model: Hanna

Parameters/Sensors: pH, Cond, Temp

			Pre-Calibration Reading		Post-Calibration Reading	
Parameter	Units	Standard Value	Time	Value	Time	Value
pH	std	7.00				
Cond	uS/cm	12880 (12.88mS)			1500	12.89
pH	std	4.01				

Notes: pH probe would not calibrate

Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin Van Oort Sample ID: MrM-MW-9R

Date: 5/23/11 Field Conditions: Raining, 60's, beaming sunny & warm

Condition of Well: Good

Depth to Water (DTW): 17.25 Total Depth of Well (TD): 50.3

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 5.39 Three Well Volumes: 16.16

Purge Equipment: Bailer Pump Depth: — Start Time: 1545

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C) F	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1550	1.2			7.00	0.86	47.7				
1622	8			6.99	0.89	45.5				
1637	11			6.99	0.91	45.8				
1658	16			6.99	0.91	45.1				

Sample Time: 1710 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, ~~COD~~	
500 ~~250~~mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 17.3 gal Final Depth to Water: 16.83 (1740) End Time: 1730

Notes: Duplicate sample 1715, MrM-MW-9R-DUP

Sampler Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site: [illegible] Sample Location: MW-9A

Personnel: [illegible] Sample ID: MW-MW-9A

Date: 5/24/11 Field Conditions: [illegible]

Condition of Well: Good

Casing Volume (gallons): 12.2 Total Depth of Well (TD): 20.3

Well Diameter: 2" Well Diameter Conversion (D): 2" = 0.163 4" = 0.653 6" = 1.469

Casing Volume (gallons) (TD - DTW) x D: 5.19 Time Well Purged: 16:16

Purge Equipment: [illegible] Purge Begin: — Stop Time: 15:15

Time (24 hr)	Volume (gallons)	Rate (gpm)	DTW (feet)	pH (su)	EC (umhos/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Appearance
15:50	1.5			7.00	0.56	42.7				
16:22	3			6.39	0.37	41.5				
16:52	11			6.27	0.21	45.8				
16:58	16			6.20	0.41	45.1				

Service Time: 1210 Sampling Method: Bailer

Constituents	Preservative	Container	Comments
2-Butanone (MEK)	HCl	2 x 40 ml	
2-Hexanone	HCl	2 x 40 ml	
Methyl Ethyl Ketone	HCl	2 x 40 ml	
Sample Type: Grab	Purge	Shallow Grab	Dissolved Metals

Total Volume Purged: 17.3 gal Final Depth to Water: 16.33 (ft) Start Time: 1210

Notes: Dup Taken Sample 1215 MW-MW 2B-dup

Sampler Signature: [illegible] Date: 5/24

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-OW

Personnel: Martin Van Oort Sample ID: MrM-MW-OW

Date: 5/24/11 Field Conditions: Cloudy, rainy, upper 40's

Condition of Well: No outer casing, former water well

Depth to Water (DTW): 16.83 Total Depth of Well (TD): 78

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 39.94 Three Well Volumes: 119.83

Purge Equipment: Bailer Pump Depth: — Start Time: 800

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
808	1			6.98	0.66	46.1				
840	11			6.98	0.61	47.3				
915	21			6.98	0.68	46.8				
945	31			6.99	0.78	47.8				
1000	36			6.99	0.75	47.5				
1020	41			6.98	0.79	47.0				

Sample Time: 1035 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 42 Final Depth to Water: — End Time: 1050

Notes: Collected field measurements & sampled from water from bottom of well.

Sampler Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-11

Personnel: Marilin Van Oort Sample ID: MvM-MW-11

Date: 5/24/11 Field Conditions: Rainy, windy, ~50°

Condition of Well: Good

Depth to Water (DTW): 28.17 Total Depth of Well (TD): 82.9

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 8.92 Three Well Volumes: 26.76

Purge Equipment: Bailer Pump Depth: — Start Time: 1300

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1310	1			6.99	0.71	49.1				
1335	6			6.99	0.61	48.3				
1400	11			6.98	0.61	47.7				
1435	16			6.98	0.61	47.6				
1510	26			6.98	0.60	47.6				

Sample Time: 1525 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 27 Final Depth to Water: — End Time: 1535

Notes:

Sampler Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-HW

Personnel: Martin Van Oort Sample ID: M-M-MW-HW

Date: 5/24/11 Field Conditions: Cool, windy, drizzle

Condition of Well: Unknown, spigot behind house

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed pump Pump Depth: — Start Time: 1605

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1608	3	~3								
1613				6.99	0.75	49.2				
1627				6.98	0.74	49.0				
1645				6.98	0.75	49.4				
1656				6.98	0.75	49.5				

Sample Time: 1700 Sampling Method: Spigot nearest house

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 153 Final Depth to Water: — End Time: 1705

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mistic M Landfill Sample Location: MW-12

Personnel: Martin Van Oort Sample ID: MrM-MW-12

Date: 5/25/11 Field Conditions: Cloudy, mist, 50's

Condition of Well: Good

Depth to Water (DTW): Flowing Total Depth of Well (TD): 105.3

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 17.16 — Three Well Volumes: 51.49 —

Purge Equipment: Bailer Pump Depth: — Start Time: 855

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
920	1			6.98	0.68	47.5				Flowing ~0.25 gpm
945	11			6.98	0.66	49.5				
1150	26			6.99	0.64	48.9				
1155										~45 gallons flowed

Sample Time: 1220 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: ~75 Final Depth to Water: — End Time: 1230

Notes:

Sampler Signature:

Page 1 of 1

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page _____ of _____

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ Solid Waste Section	Mister M Landfill	State:	Yes ☐ No ☐
Report Mail Address:	**Contact Name:** / **Phone/Fax:**	**Email:**	**Sampler: (Please Print)**
1520 E. Sixth Ave, Helena, MT 59620	Martin Van Oort 444-2802	mvanoort@mt.gov	Martin Van Oort
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
Same	Same		7799

Special Report/Formats:

☐ DW
☐ POTW/WWTP
☒ State: Sol Waste
☐ Other: _____
☐ EDD/EDT (Electronic Data)
Format: _____
☐ LEVEL IV
☐ NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Dissolved Metals	Nitrate, Nitrite	Cl, SO4, pH, Cond.	8260 VOCs						SEE ATTACHED
1 MW-9R	5/23/11	1710	W	X	X	X	X						
2 MW-9R-DUP	5/23/11	1715											
3 M-M-MW-OW	5/24/11	1035											
4 M-M-MW-11	5/24/11	1525											
5 M-M-MW-HW	5/24/11	1700											
6 M-M-MW-12	5/25/11	1220											
7													
8													
9													
10													

Standard Turnaround (TAT)

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments:

LABORATORY USE ONLY

Shipped by: HAND

Cooler ID(s): 1

Receipt Temp: 5.0 °C

On Ice: Y N

Custody Seal
On Bottle Y N
On Cooler Y N

Intact Y N

Signature Match Y N

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
[illegible]	5/25/11 1712	Martin Van Oort			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory:	Date/Time:	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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BEFORE COMPLETING THE ATTACHED CHAIN OF CUSTODY(COC) FORM:

- If you wish to request RUSH Turn Around Time (TAT), contact the laboratory PRIOR to sample submittal to confirm that RUSH analysis is available for your request. Verify date required. Additional charges will apply for RUSH Turn Around Time (TAT).
- Please contact ELI PRIOR to sample submittal if services are other than standard.
- It is important to complete the Chain Of Custody (COC) form with as much detailed information as possible. This information is required so that the appropriate analytical services, reporting and invoicing can be provided for your project.

Quote Number or Bottle Order Number:
ELI provides quotes for project specific sampling requirements. It is very important to provide the ELI quote number or bottle order number to assure that you receive the quoted pricing for your project.

Select the types of services you need:
If services other than standard are required for your analytical project, contact ELI PRIOR to sample submittal.

Sample Disposal:
ELI, when applicable, will dispose of all non-hazardous samples. Routinely, hazardous samples will be returned to the client. If requested, ELI will dispose of hazardous samples at client's expense.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT (Provide as much information as possible.)

Company Name: ABC Corporation	Project Name, PWS, Permit, Etc.: Rockport Reclamation Project	Sample Origin State: Montana	EPA/State Compliance: Yes ☐ No ☒
Report Mail Address: 1234 Main St, Anywhere, MT 59101	Contact Name: John Smith; Phone/Fax: 605-444-1234	Email: anyone@email.com	Sampler: (Please Print) SAME
Invoice Address: P.O. Box 222, City ST 11111	Invoice Contact & Phone: Jane Doe 406-555-1212	Purchase Order: A98765	Quote/Bottle Order: HO1-172

Special Report/Formats:
☐ DW ☐ POTW/WWTP ☐ State: ____ ☐ Other: ____
☐ EDD/EDT (Electronic Data) Format: ____ ☐ LEVEL IV ☐ NELAC

ANALYSIS REQUESTED

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments: Spoke to Joe RE: Rush TAT

Shipped by: ____ Cooler ID(s): ____ Receipt Temp ____ °C On Ice: Y N Custody Seal: On Bottle Y N, On Cooler Y N, Intact Y N, Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW Air Water Soils/Solids Vegetation Biossay Other DW - Drinking Water)	Radium 226	Ammonia	Nitrate	SEE ATTACHED	Standard Turnaround (TAT)	RUSH
1 MW-1	08/01/09	13:10	3-W	X	X	X			X
2 Soil From Pad	08/02/09	09:47	1-S	X	X	X			X
3									
4									
5									
6									
7									
8									
9									
10									

Example

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
John Smith	08/09/09 14:15	John Smith	Mary Cook	08/09/09 14:15	Mary Cook
Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
			Received by Laboratory:	Date/Time:	Signature:

Sample Disposal: Return to Client: ____ Lab Disposal: ____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly noted on your analytical report.

Water Level Measurement Form

Site Name: Mistic M Landfill Date: 5/23/11

Personnel: Martin Van Dort Equipment: Slope Indicator

Field Conditions: Mostly cloudy, 60's, rain showers

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-6	1245	86.83			
MW-5	1405	88.73			
MW-9R	1420	17.24			
MW-11	1428	28.42			
MW-12	1440	Flowing			
MW-DW	1445	17.01			

Notes:

Signature:

Page ___ of ___

Water Quality Meter Calibration Form

Site Name: Mystic M Landfill Date: 5/23/11

Personnel: Martin Van Oort

Field Conditions: Raining

Meter Model: Hanna

Parameters/Sensors: pH, Cond, Temp

Parameter	Units	Standard Value	Pre-Calibration Reading Time	Pre-Calibration Reading Value	Post-Calibration Reading Time	Post-Calibration Reading Value
pH	std	7.00				
Cond	uS/cm	12880 (12.88mS)			1500	12.89
pH	std	4.01				

Notes: pH probe would not calibrate

Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin Van Oort Sample ID: MrM-MW-9R

Date: 5/23/11 Field Conditions: Raining, 60's, becoming sunny & warm

Condition of Well: Good

Depth to Water (DTW): 17.25 Total Depth of Well (TD): 50.3

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 5.39 Three Well Volumes: 16.16

Purge Equipment: Bailer Pump Depth: — Start Time: 1545

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°~~C~~) F	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1550	1.2			7.00	0.86	47.7				
1622	8			6.99	0.89	45.5				
1637	11			6.99	0.91	45.8				
1658	16			6.99	0.91	45.1				

Sample Time: 1710 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, [redacted]	
500 ~~250~~mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 17.3 gal Final Depth to Water: 16.83 (1740) End Time: 1730

Notes: Duplicate Sample 1715, MrM-MW-9R-DUP

Sampler Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mr. L. M. L. [illegible] Station Location: MW-2R

Personnel: M. L. V. O. T. Sample ID: MW-MW-2R

Date: 5/12/11 Field Conditions: Rainy, 65°, breezy, Sunny, 1 hour

Condition at Well: Good

Depth to Water (DTW): 12.35 Total Depth of Well (TD): 20.3

Well Diameter: 2" Well Diameter Conversion (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 5.32 Three Well Volumes: 16.16

Purge Equipment: Bailer Pump Depth: — Start Time: 1534

Time (military)	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (su)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1550	2.2			7.00	0.86	14.7				
1555	3			6.99	0.87	14.7				
1557	11			6.99	0.91	14.3				
1559	16			6.99	0.91	14.1				

Sample Time: 1210 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40ml Vial	HCl	VOCs	
250ml Amber	None	SVOCs	
250ml Plastic	HNO_3	Dissolved Metals	
250ml Plastic	H_2SO_4	Nitrate/Nitrite, COD	
500ml Plastic	None	Sulfide, Chloride, pH, SC	

Total Volume Purged: 12.3 gal Final Depth to Water: 14.37 (1230) Total Time: 1230

Notes: Purge dry. Sample MW-MW-2R-0512

Sample Signature: [illegible]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-OW

Personnel: Martin Van Oort Sample ID: MrM-MW-OW

Date: 5/24/11 Field Conditions: Cloudy, rainy, upper 40's

Condition of Well: No outer casing, former water well

Depth to Water (DTW): 16.83 Total Depth of Well (TD): 78

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 39.94 Three Well Volumes: 119.83

Purge Equipment: Bailer Pump Depth: — Start Time: 800

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
808	1			6.98	0.66	46.1				
840	11			6.98	0.61	47.3				
915	21			6.98	0.68	46.8				
945	31			6.99	0.78	47.8				
1000	36			6.99	0.75	47.5				
1020	41			6.98	0.79	47.0				

Sample Time: 1035 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 42 Final Depth to Water: — End Time: 1050

Notes: Collected field measurements & sampled from water from bottom of well.

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sample Location: [illegible]

Personnel: [illegible] Stick Up: [illegible]

Date: [illegible] Field Conditions: [illegible]

Condition of Well: [illegible]

Depth to Water (DTW): [illegible] Total Depth of Well (TD): [illegible]

Well Diameter: [illegible] Well Constant Correction (C): [illegible]

One Well Volume (Gallons) = (TD - DTW) x C: [illegible] Three Well Volumes: [illegible]

Pump Equipment: [illegible] Pump Depth: — Start Time: [illegible]

Time	Vol (gal)	Flow (lpm)	DTW (feet)	pH (s.u.)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]			[illegible]	[illegible]	[illegible]				

Sample Time: [illegible] Sampling Method: [illegible]

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
2 x 40mL Plastic	HNO3	Cyanide	
2 x 40mL Plastic	NaOH	Dissolved Metals	
2 x 40mL Plastic	H2SO4	Nitrate+Nitrite, COD	
2 x 40mL Plastic	None	Sulfate, Chloride, pH, SC	

Total Volume Purged: [illegible] Final Depth to Water: — End Time: [illegible]

Notes: [illegible]

Sampler Signature: [illegible] Page [illegible] of [illegible]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-11

Personnel: Marlin Van Oort Sample ID: MrM-MW-11

Date: 5/24/11 Field Conditions: Rainy, windy, ~50°

Condition of Well: Good

Depth to Water (DTW): 28.17 Total Depth of Well (TD): 82.9

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 8.92 Three Well Volumes: 26.76

Purge Equipment: Bailer Pump Depth: — Start Time: 1300

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1310	1			6.99	0.71	49.1				
1335	6			6.99	0.61	48.3				
1400	11			6.98	0.61	47.7				
1435	16			6.98	0.61	47.6				
1510	26			6.98	0.60	47.6				

Sample Time: 1525 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 27 Final Depth to Water: — End Time: 1535

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sample Location: MW-11

Personnel: [illegible] Sample ID: MW-11

Date: [illegible] Field Conditions: [illegible]

Condition of Well: Good

Depth to Water (DTW): 23.12 Total Depth of Well (TD): 82.9

Well Diameter: 2 in Well Diameter Correction (C): [illegible]

One Well Volume (gallons) (TD - DTW) x C: 5.72 Three Well Volumes: 16.76

Purge Equipment: Bailer Pump Depth: — Start Time: 1300

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (SU)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1310	1			6.99	0.71	19.1				
1315	3			6.99	0.61	17.3				
1320	5			6.99	0.61	17.2				
1325	6			6.99	0.61	17.5				
1330	7.6			6.98	0.60	17.6				

Sample Time: 1335 Sampling Method: Bailer

Container	Preservative	Parameters	Comments
2 x 40ml Vial	HCl	VOCs	
2x1L Plastic	NaOH	Cyanide	
2x1L Plastic	HNO3	Dissolved Metals	
2x1L Plastic	H2SO4	Nitrate/Nitrite, COD	
250ml Plastic	None	Sulfate, Chloride, pH, SC	

Total Volume Purged: 7.7 Final Depth to Water: — End Time: 1335

Notes:

Sample Signature: [illegible]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-HW

Personnel: Martin Van Dort Sample ID: M-M-MW-HW

Date: 5/24/11 Field Conditions: Cool, windy, drizzle

Condition of Well: Unknown, spigot behind house

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed pump Pump Depth: — Start Time: 1605

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1608	3	~3								
1613				6.99	0.75	49.2				
1627				6.98	0.74	49.0				
1645				6.98	0.75	49.4				
1656				6.98	0.75	49.5				

Sample Time: 1700 Sampling Method: Spigot nearest house

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 153 Final Depth to Water: — End Time: 1705

Notes:

Sampler Signature: [illegible]

Monitoring Well Purging and Sampling Form

Site name: Mis/Ln Lnd Fill Sample/section: MW-3W

Personnel: Martin Vu, Cat Sample ID: MW-3W

Date: 5/29/11 Field Conditions: Cool, windy, 45-52F

Condition of Well: Locked, Sp-2 Lock Loose

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) * C: Times Well Volumes:

Purge Equipment: Tubing pump Purge Cycle: — Start Time: 1605

Time	Vol. (Gal)	Rate (gpm)	DTW (feet)	pH (std)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1605	3	2								
1610				6.97	0.22	19.2				
1615				6.97	0.24	19.0				
1620				6.98	0.25	19.4				
1625				6.99	0.25	19.5				

Sample Time: 1630 Sampling Method: Tubing/Bailer

Containers	# containers	Filtration	Comments
40 ml Vial	3	VOCs	
1 liter Plastic	1	Cations	
500 ml Plastic	1	Dissolved Metals	
250 ml Plastic	1	Anions+Nitrite, COD	
250 ml Plastic	1	Anions, Cyanide, pH, SC	

Total Volume Purged: 15 L Final Depth to Water: — End Time: 1705

Notes:

Sampler Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mistic M Landfill Sample Location: MW-12

Personnel: Martin Van Oort Sample ID: MrM-MW-12

Date: 5/25/11 Field Conditions: Cloudy, mist, 50's

Condition of Well: Good

Depth to Water (DTW): Flowing Total Depth of Well (TD): 105.3

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 17.16 — Three Well Volumes: 51.49 —

Purge Equipment: Bailer Pump Depth: — Start Time: 855

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
920	1			6.98	0.68	47.5				Flowing ~0.25 gpm
945	11			6.98	0.66	49.5				
1150	26			6.99	0.64	48.9				
1155										~45 gallons flowed

Sample Time: 1220 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
250mL Plastic	NaOH	Cyanide	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, COD	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: ~75 Final Depth to Water: — End Time: 1230

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mid-Valley Laundry Sample Location: MW-21

Personnel: Mike Van Dyke Sample ID: MW-21

Date: 5/13/11 Field Conditions: Clear, warm, 50's

Condition of Well: Good

Depth to Water (DTW): Flooded Total Depth of Well (TD): 10.5

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons): TD - DTW x C 12.4 - Three Well Volumes: 37.2

Purge Equipment: Bailer Purge Depth: — Start Time: 8:25

Time	Vol (gal)	Rate (gpm)	DTW (feet)	pH (s.u.)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
8:30	1			6.98	0.85	14.5				Flow rate = 0.25 gpm
8:35	11			6.98	0.86	14.5				
8:40	22			7.29	0.84	14.5				
8:45										

Sample Time: 12:20 Sampling Method: Bailer

Constituents	Preservative	Preservatives	Comments
2 x 40ml Vial	HCl	VOCs	
2 x 1L Poly	NaOH	Cyanide	
2 x 1L Poly	HNO_3	Dissolved Metals	
2 x 1L Poly	H_2SO_4	Nitrate/Nitrite, COD	
2 x 1L Poly	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 37.5 Final Depth to Water: — End Time: 12:30

Notes:

Sampler Signature: [signature]

Methane Monitoring Form

Site Name: Master M Landfill Date: 5/23/11

Personnel: Martin Van Dort

Field Conditions: Mostly Cloudy 60's, rain showers

Meter Model: GFG 450

Calibration Time: 1120 5/23/11 Standard: 50% LEL Pre-Reading: 53.5%, Post-Reading: 50.5%,

Measurement Point	Time	% LEL CH_4	O_2	CO	H_2S	Comments
MW-1	1130	0	20.3	0	1.4	H_2S spikes then rise to 0
MW-2	1140	0	13.5	0	0.4	" " " " "
MW-6M	1235	0	17.4	0	0	
South Vent	1330	0	20.9	0	0	
North Vent	1335	0	20.7	0	0	
MW-5M	1355	0	2.0	0	0	No CH_4 readings below 10% O_2 but none detected during purge or recovery

Notes:

Signature:

Page ___ of ___

Methane Monitoring Form

Site Name: Malin Landfill Date: 7/25/11

Personnel: Malin V.P.G.

Field Conditions: Partly Cloudy 60°F Cloud Cover: 100%

Monitor Model: GFX 400

Calibration: Span/Zero

Time: 11:20 Span Gas: 50% LEL Pre-Reading: 51.5% Post-Reading: 50.5%

Measurement Point	Time	CH_4 (% LEL)	O_2	CO	H_2S	Comments
MW-1	11:10	0	20.7	0	1.4	No gas detected
MW-2	11:10	0	18.5	0	0.4	" " " " "
MW-4A	11:35	0	18.4	0	0	
Malin V.P.G.	11:30	0	20.9	0	0	
Malin V.P.G.	11:35	0	20.7	0	0	
MW-5M	11:25	0	2.0	0	0	No combustible gas detected above background

Notes:

Signature: Page 1 of

Water Level Measurement Form

Site Name: Mister M Landfill Date: 10/17/11

Personnel: Martin VanDort Equipment: Slope Indicator

Field Conditions:

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-12	1115	Flowing			Barely flowing
MW-11	1125	25.32			
MW-6	1140	96.57			
MW-5	1215	97.10			
MW-9R	1225	40.78			
MW-OW	1230	25.40			

Notes:

Signature:

Page 1 of 1

Water Level Measurement Form

Site Name: Motor M Lateral Date: 10/27/11

Personnel: Martin V. Bot Equipment: Slope Indicator

Field Conditions:

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-12	11:15	Flow			Heavily Flowing
MW-11	11:35	25.33			
MW-8	11:40	64.57			
MW-5	12:15	92.10			
MW-9R	12:35	40.23			
MW-9W	12:30	25.40			

Notes:

Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: M-M Landfill Sample Location: MW-11

Personnel: Martin Van Oort Sample ID: M-M-MW-11 & DUP

Date: 10/17/11 Field Conditions: Sunny, breezy, 50's

Condition of Well: Good

Depth to Water (DTW): 25.32 Total Depth of Well (TD): 82.55

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 9.33 Three Well Volumes: 27.99

Purge Equipment: Bailer Pump Depth: — Start Time: 1320

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1324	1.5			6.47	0.418	8.95	-40.0			
1343	6.5			7.18	0.419	8.63	-37.6			
1400	11.5			7.31	0.419	8.71	-49.4			
1415	16.5			7.39	0.421	8.62	-55.8			
1431	21.5			7.44	0.420	8.66	-61.7			
1448	26.5			7.46	0.394	8.56	-63.9			
1502	30.5			7.48	0.409	8.62	-66.1			

Sample Time: 1510 Sampling Method:

Dup 1515

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, ~~COD~~	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 31.5 Final Depth to Water: End Time: 1535

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin Van Oort Sample ID: MrM-MW-9R

Date: 10/17/11 Field Conditions: Mostly cloudy, windy, ~50°

Condition of Well: Fair

Depth to Water (DTW): 40.78 Total Depth of Well (TD): 50.30

Well Diameter: ~~[illegible]~~ MW9 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 1.55 Three Well Volumes: 4.66

Purge Equipment: Bailer Pump Depth: Start Time: 1610

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1617	1.5			6.63	0.671	7.94	-40.1			Dry

Sample Time: 10/18/11 810 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
~~250mL Plastic~~	~~HNO_3~~	~~Dissolved Metals~~	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, ~~COD~~	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 1.75 Final Depth to Water: End Time: 820

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sample Location: MW-[illegible]

Personnel: [illegible] Sample ID: [illegible]

Date: 10/27/11 Field Conditions: [illegible]

Condition of Well: [illegible]

Depth to Water (DTW): [illegible] Total Depth of Well (TD): [illegible]

Well Diameter: 2" Well Diameter Conversion (CD): 2" = 0.163 4" = 0.653 6" = [illegible]

One Well Volume (gallons) = (TD - DTW) x C: [illegible] Three Well Volumes: [illegible]

Purge Equipment: [illegible] Purging Depth: Start Time: 1610

Time	Vol (gal)	Rate (gpm)	DTW (feet)	pH (s.u.)	SC (umhos/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1617	1.5			5.6	0.271	22.7	-40.1			Dry

Sample Time: 1630 Sampling Method: [illegible]

Constituents	Preservative	Parameters	Comments
[illegible]	HCl	[illegible]	
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
[illegible]	none	[illegible]	

Total Volume Purged: 1.75 Final Depth to Water: End Time: 1620

Notes:

Sample Signature: [illegible]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-OW

Personnel: Martin Van Oort Sample ID: MrM-MW-OW

Date: 10/18/11 Field Conditions: Sunny, breezy, upper 20's

Condition of Well: No metal casing, poor

Depth to Water (DTW): 25.40 Total Depth of Well (TD): —

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Bailer x2 Pump Depth: — Start Time: 855

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
907	6.5			7.26	0.504	7.53	-51.2			
919	11.5			7.52	0.376	7.80	-54.2			
931	16.5			7.64	0.325	7.86	-58.4			
940	21.5			7.65	0.480	8.07	-61.2			
950	26.5			7.65	0.503	8.13	-70.7			
1001	31.5			7.64	0.502	8.21	-85.9			
1011	36.5			7.60	0.489	8.28	-103.6			
1020	41.5			7.56	0.468	8.28	-111.4			
1028	46.5			7.53	0.469	8.36	-113.7			

Sample Time: 1035 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
250mL Plastic	HNO_3	Dissolved Metals Fe, Zn only	
~~250mL Plastic~~	~~H_2SO_4~~	~~Nitrate+Nitrite, COD~~	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 47 Final Depth to Water: — End Time: 1045

Notes:

Sampler Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mystic Marina Location — Sample Location: MW-01

Personnel: Mystic Vera Gent — Sample ID: MW-01-MW-01

Date: 10/15/11 — Field Conditions: Sunny, breezy, high 70's

Condition of Well: Dry, metal rusty, good

Depth to Water (DTW): 2.34.0 — Total Depth of Well (TD): —

Well Diameter: 4" — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C — Three Well Volumes: —

Purge Equipment: 12 V. Pump — Pump Depth: — — Start Time: 845

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (unit)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
0907	4.5			7.54	0.594	7.71	-31.2			
0912	11.5			7.72	0.576	7.39	-34.2			
0917	18.5			7.69	0.535	7.86	-33.4			
0922	25.5			7.61	0.450	8.07	-41.2			
0927	32.5			7.62	0.505	8.13	-40.2			
0932	39.5			7.64	0.592	8.21	-37.5			
0937	46.5			7.67	0.459	8.23	-38.6			
0942	53.5			7.68	0.468	8.25	-40.4			
0947	60.5			7.69	0.463	8.36	-41.2			

Sample Time: 0955 — Sampling Method: LF-1V

Constituent	Preservative	Parameters	Comments
2x40mL VOA	HCl	VOCs	
500mL Amber	4°C	Semi-VOCs	
250mL Poly	HNO3	Dissolved Metals	
2x500mL Amber	4°C	Pesticides	
500mL Poly	None	Sulfide, Cyanide, NH3, SO4	

Total Volume Purged: 47 — Final Depth to Water: — — End Time: 1015

Notes:

Sampler Signature: [illegible]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-12

Personnel: Martin Van Oort Sample ID: M-M-MW-12

Date: 10/18/11 Field Conditions: Sunny, calm ~80°

Condition of Well: Good

Depth to Water (DTW): Flowing Total Depth of Well (TD): 106

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 17.28 Three Well Volumes: 51.83

Purge Equipment: Bailer Pump Depth: — Start Time: 1230

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1232	4.0			6.28	0.326	10.59	-70.0			2.5 flowed
1258	14.0			7.21	0.455	8.79	-73.9			before purge
1327	24			7.28	0.452	8.65	-88.2			
1355	34			7.29	0.452	8.71	-88.2			
1427	44			7.30	0.455	8.74	-87.9			
1441	49			7.29	0.453	8.68	-86.1			
1449	52			7.30	0.455	8.69	-87.1			

Sample Time: 1455 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 52.5 Final Depth to Water: — End Time: 1505

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sample Location: MW-12

Personnel: [illegible] Sample ID: [illegible]-MW-12

Date: 10/15/11 Well Condition: Sandy, [illegible] = 10"

Condition of Well: Good

Depth to Water (DTW): [illegible] Total Depth of Well (TD): 16'

Well Diameter: 2" Well Diameter Correlation (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C 17.25 Three Well Volumes 51.83

Purge Equipment: [illegible] Pump Depth: — Start Time: 1230

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (std)	EC (mmhos/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1212	14.0			6.28	0.356	19.32	+27.0			[illegible]
1213	14.0			7.11	0.415	20.10	-29.7			
1217	21			7.15	0.417	20.5	-28.2			
1225	24			7.25	0.420	20.21	-32.2			
1232	27			7.32	0.425	20.11	-32.9			
1237	29			7.37	0.415	20.5	-36.1			
1242	32			7.36	0.413	20.5	-32.1			

Sample Time: 1255 Sampling Method: Bailer

Comments: [illegible]

Total Volume Purged: 32 gal Final Depth to Water: — Sampling Time: 1230

Notes:

Sampler: [illegible] Date: [illegible]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-HW

Personnel: Martin Van Oort Sample ID: MrM-MW-HW

Date: 10/18/17 Field Conditions: Sunny, calm, mid 60's

Condition of Well: Unknown, sampled frost free spigot behind house

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed Pump Pump Depth: — Start Time: 1525

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (ºC)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1528	3.4	3.4		6.67	0.576	12.71	-48.0			
1530	17			6.80	0.549	11.02	-55.4			
1535	34			7.09	0.541	10.51	-65.6			
1540	64	6		7.16	0.538	10.31	-66.3			
1545	94			7.19	0.536	10.13	-64.7			
1550	124			7.27	0.533	9.96	-63.1			
1555	154			7.31	0.536	10.20	-61.9			
1600	184			7.33	0.538	10.24	-61.3			

Sample Time: 1605 Sampling Method: Spigot behind house, reduced rate to ~1gpm

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: ~200 Final Depth to Water: — End Time: 1610

Notes:

Sampler Signature: [signature]

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ Solid Waste Section	Mistic M Landfill	State: MT	Yes ☒ No ☐
Report Mail Address:	**Contact Name:** / **Phone/Fax:**	**Email:**	**Sampler: (Please Print)**
PO Box 200901, Helena, MT 59620	Martin Van Oort 444-2802	mvanoort@mt.gov	Martin Van Oort
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
Same	Same		8557

Special Report/Formats:

- ☐ DW
- ☐ POTW/WWTP
- ☒ State: solid waste
- ☐ Other: _____
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	8260 VOCs	Sulfate, Chloride, pH, SC	Nitrate/Nitrite	Dissolved metals (all)	Dissolved metals (Fe & Zn)					SEE ATTACHED	Standard Turnaround (TAT)	RUSH	Comments:
1 M-M-MW-11	10/17/11	1510	W	X	X	X	X									
2 M-M-MW-11-DUP	10/17/11	1515	W	X	X	X	X									
3 M-M-MW-9R	10/18/11	810	W	X	X	X										
4 M-M-MW-OW	↓	1035	W	X	X			X								
5 M-M-MW-12		1455	W	X	X	X	X									
6 M-M-MW-HW	↓	1605	W	X	X	X	X									
7 Trip Blank	10/17/11	—	W	X												
8																
9																
10																

➡ Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Shipped by: Hand

Cooler ID(s): 1

Receipt Temp 2.4 °C

On Ice: Y N

Custody Seal On Bottle Y N; On Cooler Y N

Intact Y N

Signature Match Y N

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Martin Van Oort	10/19/11 1205	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

Received by Laboratory: [illegible] Date/Time: 10.19.11 2:00 Signature: [illegible]

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

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E-mail: rapid_city@energylab.com
Toll Free: 888.672.1225
Voice: 605.342.1225
Fax: 605.342.1397

BEFORE COMPLETING THE ATTACHED CHAIN OF CUSTODY(COC) FORM:

If you wish to request RUSH Turn Around Time (TAT), contact the laboratory PRIOR to sample submittal to confirm that RUSH analysis is available for your request. Verify date required. Additional charges will apply for RUSH Turn Around Time (TAT).

Please contact ELI PRIOR to sample submittal if services are other than standard.

It is important to complete the Chain Of Custody (COC) form with as much detailed information as possible. This information is required so that the appropriate analytical services, reporting and invoicing can be provided for your project.

Quote Number or Bottle Order Number:
ELI provides quotes for project specific sampling requirements. It is very important to provide the ELI quote number or bottle order number to assure that you receive the quoted pricing for your project.

Select the types of services you need:
If services other than standard are required for your analytical project, contact ELI PRIOR to sample submittal.

Sample Disposal:
ELI, when applicable, will dispose of all non-hazardous samples. Routinely, hazardous samples will be returned to the client. If requested, ELI will dispose of hazardous samples at client's expense.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT (Provide as much information as possible.)

Company Name: ABC Corporation	Project Name, PWS, Permit, Etc.: Rockport Reclamation Project	Sample Origin State: Montana	EPA/State Compliance: Yes ☐ No ☒
Report Mail Address: 1234 Main St, Anywhere, MT 59101	Contact Name: John Smith; Phone/Fax: 605-444-1234	Email: anyone@email.com	Sampler: (Please Print) SAME
Invoice Address: P.O. Box 222, City ST 11111	Invoice Contact & Phone: Jane Doe 406-555-1212	Purchase Order: A98765	Quote/Bottle Order: HO1-172

Special Report/Formats:
☐ DW ☐ POTW/WWTP ☐ State: ____ ☐ Other: ____
☐ EDD/EDT (Electronic Data) Format: ____ ☐ LEVEL IV ☐ NELAC

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Soils/Solids Vegetation Biosolids Other; DW - Drinking Water)	Radium 226	Ammonia	Nitrate							SEE ATTACHED	Standard Turnaround (TAT)	RUSH
1 MW-1	08/01/09	13:10	3-W	X	X	X									X
2 Soil From Pad	08/02/09	09:47	1-S	X	X	X									X
3															
4															
5															
6															
7															
8															
9															
10															

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Spoke to Joe RE: Rush TAT

Shipped by: ____ Cooler ID(s): ____ Receipt Temp ____ °C On Ice: Y N Custody Seal: On Bottle Y N On Cooler Y N Intact Y N Signature Match Y N

LABORATORY USE ONLY

Example

Custody Record MUST be Signed	Relinquished by (print): John Smith	Date/Time: 08/09/09 14:15	Signature: John Smith	Received by (print): Mary Cook	Date/Time: 08/09/09 14:15	Signature: Mary Cook
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client: ____	Lab Disposal: ____		Received by Laboratory:	Date/Time:	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Water Level Measurement Form

Site Name: Mister M Landfill Date: 10/23/12

Personnel: Martin Van Oort Equipment: Solinst 200'

Field Conditions: Cool, light breeze, mostly cloudy

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-6	1035	NA			Lock gunmetal, no access
MW-5	1050	102.16			
MW-9R	1110	41.97			TD = 50.25
MW-OW	1115	30.55			
MW-11	1125	26.95			TD = 82.25
MW-12	1135	4.69 *			TD = 105.2
MW-12	1625	4.57			

Notes: * Water level in 4.69 was rising slowly after unsealing cap, but equilibrate than re measured.

Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: House Well

Personnel: Martin Van Oort Sample ID: MM-MW-HW

Date: 10/23/12 Field Conditions: Chilly & breezy, mostly cloudy

Condition of Well: Domestic well

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed pump Pump Depth: — Start Time: 1205

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1206	2			7.03	0.777	12.27	127.0	12.34		
1209	5	2		7.31	0.785	12.67	120.3	6.37		
1212	11			7.23	0.784	11.93	122.3	3.21		
1220	27			7.24	0.784	10.89	120.5	2.81		
1225	39.5	2.5		7.24	0.784	10.85	119.2	2.81		
First Sample										
1243	85			7.23	0.783	10.79	118.0	3.03		

Sample Time: 1235 Sampling Method: Forest from hydrant by house

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: ~85 gal Final Depth to Water: — End Time: 1243

Notes:

Sampler Signature: [signature]

Page 1 of 1

9-15

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-11

Personnel: Martin Van Oort Sample ID: M-M-MW-11

Date: 10/23/12 Field Conditions: Windy & cold (28°F), cloudy

Condition of Well: Good

Depth to Water (DTW): 26.95 Total Depth of Well (TD): 82.25

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 9.01 Three Well Volumes: 27.04

Purge Equipment: Bailer Pump Depth: — Start Time: 1337

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1339	1			7.23	0.652	8.00	77.6	7.75		
1356	6			7.25	0.652	7.87	17.9	3.48		
1412	11			7.27	0.651	8.08	-12.9	3.42		
1430	16			7.26	0.650	8.20	-26.3	3.18		
1447	21			7.29	0.651	8.21	-33.1	3.21		
1503	26			7.29	0.650	8.25	-36.2	3.09		
1510	27			7.30	0.651	8.18	-35.9	3.52		

Sample Time: 1515 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 28 Final Depth to Water: — End Time: 1523

Notes:

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin Van Oort Sample ID: MrM-MW-9R

Date: 10/23/12 + 10/24/12 Field Conditions: Mostly cloudy, 28°, windy

Condition of Well: Ok

Depth to Water (DTW): 41.97 Total Depth of Well (TD): 50.25

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 1.35 Three Well Volumes: 4.05

Purge Equipment: Bailer Pump Depth: Start Time: 1549

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1552	1			7.05	1.010	7.66	93.0	5.61		
1603	2			7.06	0.998	7.46	89.6	4.09		
1618	4			7.07	1.035	7.19	93.4	4.10		Dry

10/24/12
Sample Time: 845 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 5 Final Depth to Water: – End Time: 900

Notes:

Sampler Signature: [signature]

Page 1 of 1

444-2835

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: Office Well

Personnel: Martin Van Dort Sample ID: M-M-MW-OW

Date: 10/24/12 Field Conditions: No water casing

Condition of Well: Flurries, 17°, partly cloudy

Depth to Water (DTW): 30.55 Total Depth of Well (TD): ~78

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 30.99 Three Well Volumes: 92.95

Purge Equipment: Bailer Pump Depth: — Start Time: 935

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
936	1			6.78	0.692	7.04	227.1	4.52		
947	6			7.33	0.692	7.31	9.1	2.96		
1007	16			7.34	0.690	7.71	-33.0	2.88		
1030	26			7.27	0.692	7.90	-64.0	2.69		
1040	31			7.24	0.696	7.79	-79.1	2.82		
1057	36			6.96	0.706	7.70	-88.9	3.35		
1113	41			6.93	0.708	7.96	-84.8	3.35		
1124	46			6.91	0.712	7.90	-86.3	2.90		

Sample Time: 1140 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 47 Final Depth to Water: — End Time: 1145

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-12

Personnel: Martin Van Oort Sample ID: M-M-MW-12 & M-M-MW-12-DUP

Date: 10/24/12 Field Conditions: Partly cloudy, light wind, 26°

Condition of Well: Good

Depth to Water (DTW): 4.57 Total Depth of Well (TD): 105.2

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 16.40 Three Well Volumes: 49.21

Purge Equipment: Bailer Pump Depth: — Start Time: 1309

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1310	1			7.05	0.700	8.90	56.3	8.07		
1322	6			6.91	0.703	7.92	-10.5	3.60		
1350	16			6.95	0.700	7.81	-44.4	2.95		
1406	26			6.99	0.700	7.82	-46.3	3.48		
1442	31			6.97	0.709	7.79	-47.6	3.03		
1511	41			6.99	0.698	7.72	-47.5	3.46		
1553	50			6.96	0.700	8.03	-49.1	3.07		

Sample Time: 1610 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 51 Final Depth to Water: — End Time: 1620

Notes: Dup 1615

Sampler Signature: [signature]

Page 1 of 1

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ Solid Waste	Mister M Landfill	State: MT	Yes ☒ No ☐
Report Mail Address:	**Contact Name:** / **Phone/Fax:**	**Email:**	**Sampler: (Please Print)**
PO Box 200901, Helena, MT 59620	Martin Van Oort 444-2802	mvanoort@mt.gov	Martin Van Oort
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
Same	Same	Mister M	10869

Special Report/Formats:

- ☐ DW
- ☐ POTW/WWTP
- ☒ State: Solid Waste
- ☐ Other: _____
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

Standard Turnaround (TAT)

SEE ATTACHED

R U S H → Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Please use reporting limits from state circular DEQ-7 for all samples.

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	8260 VOCs	pH, Cond, Cl⁻, SO₄²⁻	Nitrate + Nitrite	Dissolved Metals (All)	Fe + Zn							
1 M-M-MW-HW	10/23/12	1235	GW	X	X	X	X								
2 M-M-MW-11	10/23/12	1515	GW	X	X	X	X								
3 M-M-MW-9R	10/24/12	845	SW	X	X	X									
4 M-M-MW-OW	10/24/12	1140	SW	X	X			X							
5 M-M-MW-12	10/24/12	1610	GW	X	X	X	X								
6 M-M-MW-12-DUP	10/24/12	1615	GW	X	X	X	X								
7 Trip Blank				X											
8															
9															
10															

LABORATORY USE ONLY

Shipped by: Hand
Cooler ID(s): 1
Receipt Temp 6.0 °C JB
On Ice: Y N
Custody Seal: On Bottle Y N; On Cooler Y N
Intact Y N
Signature Match Y N

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
[illegible]	10/25/12 1230	Martin Van Oort			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Tracy Lovell	Date/Time: 10/25/12 12:30	Signature: Tracy Lovell

Sample Disposal: Return to Client: _____ Lab Disposal: _____

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Fax: 307.682.4625

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Fax: 605.342.1397

BEFORE COMPLETING THE ATTACHED CHAIN OF CUSTODY(COC) FORM:

If you wish to request RUSH Turn Around Time (TAT), contact the laboratory PRIOR to sample submittal to confirm that RUSH analysis is available for your request. Verify date required. Additional charges will apply for RUSH Turn Around Time (TAT).

Please contact ELI PRIOR to sample submittal if services are other than standard.

It is important to complete the Chain Of Custody (COC) form with as much detailed information as possible. This information is required so that the appropriate analytical services, reporting and invoicing can be provided for your project.

Quote Number or Bottle Order Number:
ELI provides quotes for project specific sampling requirements. It is very important to provide the ELI quote number or bottle order number to assure that you receive the quoted pricing for your project.

Select the types of services you need:
If services other than standard are required for your analytical project, contact ELI PRIOR to sample submittal.

Sample Disposal:
ELI, when applicable, will dispose of all non-hazardous samples. Routinely, hazardous samples will be returned to the client. If requested, ELI will dispose of hazardous samples at client's expense.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT (Provide as much information as possible.)

Company Name: ABC Corporation	Project Name, PWS, Permit, Etc.: Rockport Reclamation Project	Sample Origin State: Montana	EPA/State Compliance: Yes ☐ No ☒
Report Mail Address: 1234 Main St Anywhere, MT 59101	Contact Name: John Smith / Phone/Fax: 605-444-1234	Email: anyone@email.com	Sampler: (Please Print) SAME
Invoice Address: P.O. Box 222 City ST 11111	Invoice Contact & Phone: Jane Doe 406-555-1212	Purchase Order: A98765	Quote/Bottle Order: HO1-172

Special Report/Formats:
☐ DW ☐ POTW/WWTP ☐ State: ____ ☐ Other: ____
☐ EDD/EDT (Electronic Data) Format: ____ ☐ LEVEL IV ☐ NELAC

ANALYSIS REQUESTED

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments: Spoke to Joe RE: Rush TAT

Shipped by: ____ Cooler ID(s): ____ Receipt Temp ____ °C On Ice: Y N Custody Seal: On Bottle Y N, On Cooler Y N, Intact Y N, Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Solids Vegetation Bioassay Other; DW - Drinking Water)	Radium 226	Ammonia	Nitrate	SEE ATTACHED	Standard Turnaround (TAT)	RUSH
1 MW-1	08/01/09	13:10	3-W	X	X	X			X
2 Soil From Pad	08/02/09	09:47	1-S	X	X	X			X
3									
4									
5									
6									
7									
8									
9									
10									

Example

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
John Smith	08/09/09 14:15	John Smith	Mary Cook	08/09/09 14:15	Mary Cook
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:

Sample Disposal: Return to Client: ____ Lab Disposal: ____ Received by Laboratory: Date/Time: Signature:

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Water Level Measurement Form

Site Name: Mister M Landfill Date: 5/22/12

Personnel: Martin Van Oort Equipment: Slope indicator

Field Conditions: Partly cloudy, breezy, warm

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-12	1208	flowing			very slow flow
MW-OW	1220	22.52			
MW-9R	1222	35.01			
MW-6	1235	92.45			
MW-5	1257	94.26			
MW-11	1550	24.32			

Notes:

Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mr. M Landfill Sample Location: MW-OW

Personnel: Martin Van Oort Sample ID: Mr.M-MW-OW

Date: 5/22/12 Field Conditions: Cloudy, rain, wind, cool

Condition of Well: No outer casing

Depth to Water (DTW): 22.52 Total Depth of Well (TD): ~78 ft

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 36.23 Three Well Volumes: 108.69

Purge Equipment: Bailer x2 Pump Depth: — Start Time: 1627

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1625	Pre-Purge			7.58	0.664	8.29	13.8	0.49		Dewatered
1629	1.5			7.72	0.657	8.15	8.8	3.02		
1647	11			7.59	0.661	8.30	-1.3	2.93		
1707	21			7.59	0.681	8.34	-14.5	2.54		
1724	31			7.53	0.694	8.36	-25.6	2.82		
1733	36			7.55	0.678	8.38	-34.0	2.66		
1742	41			7.53	0.692	8.34	-44.3	2.72		
1752	46			7.50	0.706	8.48	-53.7	2.81		
1801	51			7.48	0.713	8.36	-58.9	2.61		
1809	56			7.47	0.718	8.37	-67.5	2.76		
1813	61			7.44	0.704	8.30	-69.5	2.83		
1815	Post sample			7.18	0.722	8.32	-93.1	0.47		Dewatered

Sample Time: 1820 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals (Fe + Zn)	
~~250mL Plastic~~	~~H_2SO_4~~	~~Nitrate+Nitrite~~	

Total Volume Purged: 62 Final Depth to Water: — End Time: 1832

Notes:

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mr. M Landfill Sample Location: MW-9R

Personnel: Martin VanOort Sample ID: M-M-MW-9R

Date: 5/22/12 Field Conditions: Windy, cloudy, cool

Condition of Well: Fair

Depth to Water (DTW): 35.01 Total Depth of Well (TD): 50.55

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 2.53 Three Well Volumes: 7.60

Purge Equipment: Bailer Pump Depth: — Start Time: 1355

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1345	pre-purge			7.00	1.016	8.30	-33.8	5.13		Down hole
1355										Start
1358	1			7.07	1.020	8.88	-13.2	6.01		
1424	4.5			7.17	1.020	8.46	-6.7	7.33		
1441	7.5									Dry (left in bailer)
5/23/12										
842	Post-sample			7.02	1.025	8.11	-26.1	5.22		Down hole

Sample Time: 5/23/12 820 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
~~250mL Plastic~~	~~HNO_3~~	~~Dissolved Metals~~	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 8 Final Depth to Water: — End Time: 842

Notes:

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sampling Date: [illegible]

Personnel: [illegible] Sampling Method: [illegible]

Date: [illegible] Field Conditions: [illegible]

Condition of Well: [illegible]

Depth to Water (DTW): [illegible] Total Depth of Well (TD): [illegible]

Well Diameter: [illegible] Well Diameter Conv. and (C): [illegible]

One Well Volume (gallons) = (TD - DTW) x C: [illegible] Three Well Volumes: [illegible]

Purge Equipment: [illegible] Purge Start: [illegible] Purge Stop: [illegible]

Time	Vol (gal)	Rate (gpm)	DTW (feet)	pH (unit)	SC (µS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		

Sample Time: [illegible] Sampling Method: [illegible]

Containers: [illegible] Preservative: [illegible] Comments: [illegible]

2 x 40 ml Vial: [illegible] VOCs: [illegible]

1 (ml) Vial: [illegible] Silica Gel: [illegible]

Amber Plastic: [illegible] Semi-Volatile Metals: [illegible]

250ml Plastic: [illegible] Hydride Metals: [illegible]

Total Volume Purged: [illegible] Final Depth to Water: [illegible] End Time: [illegible]

Notes: [illegible]

Sampler Signature: [illegible] Page [illegible] of [illegible]

Monitoring Well Purging and Sampling Form

Site Name: M-M Landfill Sample Location: MW-11

Personnel: Martin Van Oort Sample ID: M-M-MW-11

Date: 5/23/12 Field Conditions: Clear, light breeze, cool

Condition of Well: Good

Depth to Water (DTW): 24.32 Total Depth of Well (TD): 82.30

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 9.45 Three Well Volumes: 28.35

Purge Equipment: Bailer Pump Depth: — Start Time: 814

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
903	Pre Purge			7.44	0.637	8.52	-42.4	1.46		Downhole
918	1			7.59	0.649	8.73	-43.9	5.50		
955	11			7.49	0.639	8.56	-56.2	2.61		
1029	21			7.60	0.639	8.85	-61.5	2.23		
1050	26			7.50	0.639	8.94	-61.9	2.61		
1141	29			7.59	0.638	8.85	-62.0	2.70		
1129	Post Sampling			7.58	0.637	8.56	-71.0	0.20		Downhole

Sample Time: 1110 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 29.5 Final Depth to Water: — End Time: 1130

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sampling Location: [illegible]

Personnel: [illegible] Sample ID: [illegible]

Date: [illegible] Field Conditions: [illegible]

Condition of Well: [illegible]

Depth to Water (DTW): [illegible] Total Depth of Well (TD): [illegible]

Well Diameter: [illegible] Well Diameter Constant (K): [illegible]

One Well Volume (gallons) = (TD - DTW) x C: [illegible] Three Well Volumes: [illegible]

Purge Equipment: [illegible] Purge Date: [illegible] Start Time: [illegible]

Time	Vol (gal)	Rate (gpm)	DTW (feet)	pH (units)	SC (µmhos/cm)	Temp (°C)	ORP (Mv)	DO (mg/L)	Turb (NTU)	Comments
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										

Total Volume Purged: [illegible] Final Depth to Water: [illegible] End Time: [illegible]

Notes:

Sampler Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-12

Personnel: Martin VanDort Sample ID: M-M-MW-12

Date: 5/23/12 Field Conditions: Partly cloudy, windy, warm

Condition of Well: Good

Depth to Water (DTW): flowing Total Depth of Well (TD): ~126

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 17.28 Three Well Volumes: 51.83

Purge Equipment: bailer Pump Depth: — Start Time: 1310

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1305	Pre-purge			7.18	0.687	7.68	-69.6	0.46		~58 gal flowing down hole
1311	1			7.25	0.690	10.39	-69.9	2.29		59
1322	6			7.18	0.688	9.02	-68.2	2.42		64
1355	11			7.29	0.686	8.72	-69.6	2.69		
1406	16			7.26	0.687	8.37	-69.6	2.58		
1417	21			7.26	0.685	8.00	-70.1	2.77		
1446	Post Sample			7.26	0.687	7.87	-75.9	0.45		Down hole

Sample Time: 1430 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 22 Final Depth to Water: — End Time: 1446

Notes: Dup 1435 M-M-MW-12-Dup

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sample Location: MW-12

Personnel: [illegible] Sample ID: MW-12

Date: 5/23/12 Field Conditions: [illegible]

Condition of Well: Good

Depth to Water (DTW): 5.0 Total Depth of Well (TD): [illegible]

Well Diameter: 2" Well Diameter Conversion (C): [illegible]

One Well Volume (gallons) = (TD - DTW) x C: [illegible] Three Well Volumes: 51.82

Purge Equipment: [illegible] Pump Depth: — Start Time: 1310

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (s.u.)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb (NTU)	Comments
1305	[illegible]			7.18	0.072	20.3	-83.8	0.24		[illegible]
1311	[illegible]			7.25	0.064	19.5	-6.2	1.22		[illegible]
1317	5			7.18	0.055	18.3	-0.2	3.47		6.7
1323	11			7.17	0.056	18.7	-6.4	1.89		
1329	18			7.16	0.057	18.7	-6.6	2.50		
1335	24			7.16	0.057	18.5	-7.1	2.72		
1340	[illegible]			7.16	0.057	18.7	-7.2	1.45		[illegible]

Sample Type: MW Sampling Method: [illegible]

Constituents	Preservative	Preservation
1 x 40ml VOA	HCl	Volatiles
250ml Plastic	None	Sulfate, Chloride, pH, SC
250ml Plastic	HNO_3	Dissolved Metals
250ml Plastic	H_2SO_4	Ammonia nitrogen

Total Volume Purged: 27 Final Depth to Water: — End Time: 1346

Notes: DTW 1955 MW-12-MW-12-[illegible]

Sampler Signature: [illegible] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-HW

Personnel: Marilyn Van Oort Sample ID: M-M-MW-HW

Date: 5/23/12 Field Conditions: Partly cloudy, windy, warm

Condition of Well: Domestic

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed Pump Pump Depth: — Start Time: 1529

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1520	1			7.30	0.776	9.67	-51.5	8.70		
1533	10	~2		7.31	0.772	10.54	-51.4	3.31		
1535	15			7.32	0.770	10.09	-55.7	2.31		
1537	20	~3								
1539	25			7.33	0.772	10.27	-57.0	2.36		
1543	35	~10								
~~1550~~	~~~105~~									
MVO 1550	~105			7.35	0.774	9.59	-62.8	1.52		
1553	~135			7.33	0.773	9.56	-62.1	1.54		
1555	~155			7.33	0.773	9.55	-61.6	1.63		

Sample Time: 1605 Sampling Method: frost free spigot behind house

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: ~169 Final Depth to Water: — End Time: 1610

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: [illegible] Sample Location: [illegible]

Preliminary: [illegible] Sample ID: [illegible]

Date: [illegible] Field Contributors: [illegible]

Condition of Well: [illegible]

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Conversion (D): [illegible]

One Well Volume (gallons) = (TD – DTW) x D: — Three Well Volumes: —

Purge Equipment: [illegible] Pump Depth: — Start Time: [illegible]

Time	Vol. (gal)	Volume (liters)	DTW (feet)	pH (s.u.)	SC (mS/cm)	Temp (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										
[illegible]										

Sample Time: [illegible] Sampling Method: [illegible]

Constituents	Preservative	Comments
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	

Total Volume Purged: [illegible] Final Depth to Water: — End Time: [illegible]

Notes:

Sampler Signature: [illegible] Page 1 of 1

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page _____ of _____

PLEASE PRINT (Provide as much information as possible.)

Company Name: MT DEQ Solid Waste	Project Name, PWS, Permit, Etc.: Mister M Landfill	Sample Origin State: MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: 1520 E. Sixth Ave, Helena, MT 59620	Contact Name: Martin Van Oort Phone/Fax: 444-2802	Email: mvanoort@mt.gov	Sampler: (Please Print) Martin Van Oort
Invoice Address: Same	Invoice Contact & Phone: Same	Purchase Order:	Quote/Bottle Order: 9758

Special Report/Formats:

☐ DW
☐ POTW/WWTP
☐ State: _____
☐ Other: _____
☐ EDD/EDT (Electronic Data) Format: _____
☐ LEVEL IV
☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

SEE ATTACHED

Standard Turnaround (TAT)

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Please use DEQ-7 required reporting limits

Shipped by: Hand del

Cooler ID(s): 1 / 1

Receipt Temp: 4.6 °C

On Ice: Y N

Custody Seal: On Bottle Y N; On Cooler Y N

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	pH, Conductivity, Cl, SO4, 2-	8260 VOCs	Nitrate + Nitrite	Dissolved Mtl. by full list	Fe & Zn								
1	MW-OW	5/22/12	1820	SW	X	X			X								
2	MW-9R	5/23/12	820	SW	X	X	X										
3	MW-11	5/23/12	1110	GW	X	X	X	X									
4	MW-12	5/23/12	1430	GW	X	X	X	X									
5	MW-12-Dup	5/23/12	1435	GW	X	X	X	X									
6	MW-HW	5/23/12	1605	GW	X	X	X	X									
7	Trip Blank	5/22/12	—	IW		X											
8																	
9																	
10																	

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Martin Van Oort	5/24/12 1304	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Tracy Lowe	Date/Time: 5/24/12 13:04	Signature: [signature]

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

11634

ENERGY LABORATORIES

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Rapid City, SD
2821 Plant Street (57702)
E-mail: rapid_city@energylab.com
Toll Free: 888.672.1225
Voice: 605.342.1225
Fax: 605.342.1397

BEFORE COMPLETING THE ATTACHED CHAIN OF CUSTODY(COC) FORM:

- If you wish to request RUSH Turn Around Time (TAT), contact the laboratory PRIOR to sample submittal to confirm that RUSH analysis is available for your request. Verify date required. Additional charges will apply for RUSH Turn Around Time (TAT).
- Please contact ELI PRIOR to sample submittal if services are other than standard.
- It is important to complete the Chain Of Custody (COC) form with as much detailed information as possible. This information is required so that the appropriate analytical services, reporting and invoicing can be provided for your project.

Quote Number or Bottle Order Number:
ELI provides quotes for project specific sampling requirements. It is very important to provide the ELI quote number or bottle order number to assure that you receive the quoted pricing for your project.

Select the types of services you need:
If services other than standard are required for your analytical project, contact ELI PRIOR to sample submittal.

Sample Disposal:
ELI, when applicable, will dispose of all non-hazardous samples. Routinely, hazardous samples will be returned to the client. If requested, ELI will dispose of hazardous samples at client's expense.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT (Provide as much information as possible.)

Company Name: ABC Corporation	Project Name, PWS, Permit, Etc.: Rockport Reclamation Project	Sample Origin State: Montana	EPA/State Compliance: Yes ☐ No ☒
Report Mail Address: 1234 Main St Anywhere, MT 59101	Contact Name: John Smith / Phone/Fax: 605-444-1234	Email: anyone@email.com	Sampler: (Please Print) SAME
Invoice Address: P.O. Box 222 City ST 11111	Invoice Contact & Phone: Jane Doe 406-555-1212	Purchase Order: A98765	Quote/Bottle Order: HO1-172

Special Report/Formats:
☐ DW ☐ POTW/WWTP ☐ State: ____ ☐ Other: ____
☐ EDD/EDT (Electronic Data) Format: ____ ☐ LEVEL IV ☐ NELAC

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: AW SV B O DW; Air Water Soil Solids Vegetation Grassy Other; DW - Drinking Water)	Radium 226	Ammonia	Nitrate					SEE ATTACHED	Standard Turnaround (TAT)	RUSH
1 MW-1	08/01/09	13:10	3-W	X	X	X							X
2 Soil From Pad	08/02/09	09:47	1-S	X	X	X							X
3													
4													
5													
6													
7													
8													
9													
10													

Contact ELI prior to RUSH sample submittal for charges and scheduling – See instruction Page

Comments: Spoke to Joe RE: Rush TAT

Shipped by: ____ Cooler ID(s): ____ Receipt Temp ____ °C On Ice: Y N Custody Seal: On Bottle Y N On Cooler Y N Intact Y N Signature Match Y N

LABORATORY USE ONLY

Example

Custody Record MUST be Signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	John Smith	08/09/09 14:15	John Smith	Mary Cook	08/09/09 14:15	Mary Cook
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client: ____ Lab Disposal: ____			Received by Laboratory:	Date/Time:	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

CLOSED MISTER M LANDFILL, LICENSE #302

LEWISTOWN, FERGUS COUNTY, MONTANA

JUNE 2014 GROUNDWATER MONITORING RESULTS AND STATISTICAL ANALYSES

Prepared By:

Montana Department of Environmental Quality

Solid Waste Section

September 22, 2014

RECEIVED

SEP 05 2014

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Groundwater monitoring at the closed Mister M Landfill, License #302, was conducted in June 2014 by the Montana Department of Environmental Quality (MDEQ), Solid Waste Section, according to the July 2011 Sampling and Analysis Plan for Groundwater (SAP) (MDEQ, 2011 [2]). The Mister M Landfill is located in Fergus County, Montana, approximately four miles east of Lewistown on US Highway 87, as shown in Figure 1. As shown in Figure 2, the landfill lies in a small south facing coulee which drains to Boyd Creek. The facility received Class II wastes from 1956 to 1998, and was granted interim closure status on December 5, 2000. The current owners, Marvin and Sandra Mintyala, operated the facility from 1974 until approximately 2000, when the site was abandoned.

According to the Geohydrologic Characterization (Gillespie, 1993 revised; and Gillespie, 1994) the landfill is underlain by the Kootenai formation, which consists of predominately shale with some silty sandstone. A basal unit of sandstone in the Kootenai formation is the uppermost aquifer in the area. Minor amounts of water have been encountered in the upper portions of the Kootenai formation but most of the monitoring wells completed in the upper Kootenai formation at the site have frequently been dry or contained minimal volumes of water.

Previous groundwater sampling at the facility was conducted by the owners or their consultants from 1993-1999 (Gillespie, 1995 and 1996; Energy Laboratories, 1997, 1998 [1], and 1998 [2]; and Portage Environmental, 1999 and 2000). From 2003-2007 Tetra Tech, Inc was authorized by the MDEQ to conduct groundwater monitoring in the absence of action by the owners (Energy Laboratories, 2003, 2004, 2005, 2006, and 2007; Maxim, 2005; Tetra Tech, 2006 and 2008). MDEQ Solid Waste Section personnel have conducted groundwater monitoring from January 2009 to the present (MDEQ, 2009 [1]; 2009 [2]; 2010 [1]; 2010 [2], 2011 [1], 2011[3], 2012[2], 2013[1]).

2.0 FIELD PROCEDURES

MDEQ Solid Waste Section personnel conducted monitoring activities on June 10 and 11, 2014, including monitoring well inspections, static water level (SWL) measurements, and groundwater sample collection as part of the detection monitoring program currently in effect for the facility. The locations of the monitoring points and the activities that were performed at each point are shown in Figure 3. Copies of the field notes are in the Solid Waste Section files. All field activities described in this report were conducted in accordance with the approved July 2011 SAP, and any deviations from the SAP are described herein. The analysis of groundwater samples was conducted by Energy Laboratories Inc, in Helena, Montana.

2.1 WELL INSPECTIONS

The monitoring wells currently in use were inspected on June 10, 2014. MW-OW does not have an external protective casing and the new locking cap installed in April 2009 is already showing significant weather wear. All other monitoring wells are in good condition.

2.2 WATER LEVEL MEASUREMENTS

Static water levels were measured on June 10, 2014, in wells MW-5, MW-9R, MW-11, MW-12, and MW-OW using a Slope Indicator electric water level meter. The total depths of wells MW-9R, MW-11, and MW-12 were also recorded.

2.3 GROUNDWATER SAMPLING

Groundwater samples were collected June 10 2014, from wells MW-9R, MW-11, MW-12, MW-HW, and MW-OW. At each well that was sampled, samples were collected for all of the parameters listed in the SAP.

The wells were purged and sampled following the procedures in the SAP with the deviations described below. All of the wells were purged and sampled using disposable bailers. Field water

quality measurements were made using Horiba water quality meter U-10, which was calibrated by Solid Waste Section personnel.

After collection, the samples were labeled as described in the SAP and were stored on ice in a laboratory supplied cooler. The samples were stored according to chain-of-custody requirements and hand delivered to Energy Laboratories Inc in Helena, Montana on June 11, 2014.

3.0 Monitoring Results

3.1 Groundwater Levels and Flow

The water levels in June 2014 ranged from 3.00 to 8.03 feet lower than the May 2012. All of the monitoring wells at the site have shown a consistent trend of higher water levels in the spring and lower in the fall, due to seasonal precipitation and snowmelt. The June 2014 water levels were on average lower than October 2013 levels possibly due to lower precipitation this year. Figure 4 displays the June 2014 static water levels on a map. No attempt was made to contour the static water levels as the shallow wells are completed in minor water bearing zones of unknown horizontal extent and connectivity, and the water level measurements made in the deep water bearing zone are from wells that have not yet been surveyed. Groundwater flow in the shallow water bearing zones likely follows local topography and flows in a south to southwest direction. Groundwater flow in the deep water bearing zone is assumed to be to the southwest based on records from domestic wells in the area. Tables containing historic water levels and hydrographs for both the shallow and deep water bearing zones are included in Appendix D.

3.2 Data Validation

Upon receipt from the laboratory, the analytical results were validated as described in the SAP to ensure that the data quality objectives had been met. The samples were received by the laboratory at a temperature of 5.3°C. The pH of all samples was within acceptable limits. All samples were analyzed within the required holding times. The relative percent difference for all field and laboratory duplicates were within control limits. All laboratory control samples and

blanks were acceptable. Bromomethane and Methyl ethyl ketone were not detected in any samples and no results are flagged. Methylene chloride was detected as an estimated value in the trip blank at 0.23ug/l; no other VOCs were detected in the Trip Blank.

3.3 Groundwater Analytical Results

The following sections discuss the analytical results grouped by analyte type. A copy of the laboratory analytical report is included in Appendix A. Historical concentration plots for all parameters detected during this sampling event and a table containing historical analytical results is included in Appendix C.

3.3.1 Indicator Parameters

Groundwater at the facility has a neutral to slightly alkaline pH, with values from 7.4 to 7.7 reported for this event. Specific conductance ranged from 646 μmhos/cm in the sample from MW-11, to 1010 μmhos/cm in MW-9R. For all wells except MW-9R and MW-OW the concentrations of Chloride and Sulfate remained near typical values, with Chloride ranging from 3 to 19 mg/l, and Sulfate ranging from 31 to 61 mg/l. The concentrations of Chloride decreased in MW-9R and MW-OW, but remained within the typical range for those wells. Nitrate + Nitrite was not detected in MW-12, and MW-HW. Nitrate + Nitrite was detected at a concentration of 0.63 mg/l in MW-9R and at 0.04 mg/l in MW-11, well below the maximum contaminant level (MCL) of 10 mg/L and in the range of previous values at MW-9R. This concentration is also similar those observed in the shallow background well MW-5 in previous sampling events and in other shallow wells.

3.3.2 Dissolved Metals

Arsenic, Barium, Cadmium, Iron and Zinc were detected at low levels in facility wells during this sampling event. None of the metals detected exceeded the groundwater protection standards. The detections of metals for this sampling event increased in frequency due to the use of the new lower reporting limits for analysis of metals as outlined in MDEQ Circular DEQ-7. Since it has

just been recently implemented at the site the use of the previous data, which had higher reporting limits, for statistical comparison would skew the June 2014 data.

3.3.3 Volatile Organic Compounds

Three VOCs were detected in MW-OW during this sampling event, compared with two in May 2012. All three compounds (concentrations in µg/L): cis-1,2-Dichloroethene (13), Ethyl benzene (1.2), Styrene (1.9) and vinyl chloride (0.42), with the exception of vinyl chloride the aforementioned VOC's have been routinely detected in MW-OW. The concentration of cis-1, 2-dichloroethene has decreased significantly in MW-OW and the overall trend is only slightly increasing, Ethyl benzene and Styrene were not detected during the June 2014 sampling event. Two VOCs were detected in MW-9R: Tetrachloroethene (0.61) and cis-1,2-Dichloroethene (0.22 J). Both of these compounds have been detected routinely in MW-9R and the concentrations were lower than those measured during the previous two years. Two VOCs were detected in MW-HW. Chloroform at 0.62 ug/l and Tetrachloroethene at 0.58 ug/l. VOC's have not been typically detected in MW-11 and MW-HW.

Overall there do not appear to be any significant increasing trends in VOC's at the site, only sporadic detections.

4.0 Statistical Analysis

4.1 Statistical Methods

The statistical analyses were performed using the statistical software package Sanitas v.9.4, the validated analytical data was first screened to determine which parameters required statistical analysis. Only parameters which were detected in one or more compliance wells (MW-11 and MW-12) and had been historically detected at least once in the background well (MW-HW) were analyzed using an inter-well prediction limit. If a parameter was detected in a compliance well, but was always non-detected in the background dataset, the background value was set as the detection limit and any detection of that parameter above the detection limit was considered a statistical exceedance of background. As a result of the screening described above, the

parameters selected for prediction limit analysis were: pH, SC, Chloride, Sulfate, Arsenic, Barium, Iron, and Zinc.

The background dataset was screened to determine if trends were present using the Sen's Slope/Mann Kendall test. Each selected parameter was compared to the background dataset using an inter-well prediction limit analysis. The Sanitas software determines the distribution of the background dataset and performs the appropriate statistical test for that distribution. If the prediction limit analysis indicated an exceedance of background levels, a Sen's Slope/Mann Kendall test was conducted to analyze any trends in the data. All of the statistical tests were performed at a 95% site-wide confidence level, or the maximum confidence level that was possible given the size of the background dataset if a 95% confidence level was not possible.

A Sen's Slope/Mann Kendall test was also conducted on all parameters detected in the interior monitoring wells (MW-9R and MW-OW) to analyze any trends in the data.

4.2 Analysis Results

Table 1 contains a summary of the results of the statistical analyses. The full results of the statistical analyses are included in Appendix F. Due to the small size of the background dataset the site-wide confidence levels for non-parametric tests were less than 95%.

The values from the current sampling event for all parameters in compliance wells MW-11 and MW-12 were within prediction limits.

Trend analyses for well MW-9R indicated significant decreasing trends for Sulfate and Nitrate + Nitrite. The cause of these trends is unknown, but MW-9R is completed in a shallow aquifer which produces very little water, thus changes in groundwater chemistry are not unexpected. A significant increasing trend was also noted for Zinc in MW-OW. Metals contamination in MW-OW is thought to be a result of previous use of the well as a water supply well, and the increase in Zinc may be due to the galvanized casing and continued corrosion of metal components which may remain in the well.

5.0 Conclusions and Recommendations

Groundwater monitoring was conducted by the MDEQ at the Mister M Landfill on June 10 and 11, 2014. Water levels were measured in five wells, and groundwater samples were collected from five wells. All currently used wells were inspected.

The static water levels measured during the June 2014 event decreased on average from previous events. The seasonal variations in water level noted in the facility wells are evidence that a relatively direct connection may exist between the surface and groundwater. Water levels will continue to be monitored semi-annually in the future to provide additional data on water level trends.

Additional data from the background well, MW-HW, is useful for evaluating the results from the other deep wells and increasing the power of the statistical tests. In particular, additional data is needed from this well on background levels of metals concentrations below the previous reporting limits. MW-HW will continue to be sampled on a semi-annual basis to increase the size of the background dataset for the compliance wells. Three VOCs were detected in MW-9R at much lower levels than previous sampling events and there appears to be an overall slightly downward trend. The contaminants present in MW-9R are different than those seen in MW-OW indicating that the contamination may be from a different source or MW-9R may be closer to the source area than MW-OW; however the precise source of these VOCs is unknown. Additional data is needed to evaluate the contamination in that well. Well MW-9R will continue to be sampled in future events for Inorganics and VOCs. Well MW-OW continues to show both inorganic and organic contamination. Sulfate and Chloride have returned to near normal levels, while Zinc and Iron concentrations remain above normal levels. These metals are possibly the result of the galvanized well casing and or previous down-hole equipment associated with the use of MW-OW as a water supply well and not due to landfill leachate. VOCs continue to be detected in MW-OW at generally low levels, but the number of VOCs detected and the concentrations measured during the June 2014 sampling event continue to show an overall decreasing trend. MW-OW will continue to be sampled to track concentration trends.

The analytical results and statistical analyses from compliance wells MW-11 and MW-12 show no impacts from landfill leachate. The one VOC, cis-1,2-Dichloroethene, which was previously detected at a very low level in MW-12 was not detected during the past three sampling events. All parameters in the compliance wells are below background levels thus the facility remains in detection monitoring. MW-11 and MW-12 will continue to be sampled semi-annually as the point of compliance wells for the facility. The next groundwater sampling event is tentatively scheduled for October 2014.

6.0 References

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TABLES

Table 1: Summary of Results of Statistical Analyses for June 2014 Data

		Prediction Interval Analysis					Trend Analysis	
Parameter	**Well**	**Distribution**	**Confidence Level (%)**	**Prediction Limit(s)**	**Result**	**Exceeds Limit?**	**Slope (per yr)**	**Significant ?**
pH	MW-9R	normal	98	6.87-8.07	7.5	No	-0.02	No
	MW-11	normal	N/A	6.87-8.07	7.6	No	N/A	N/A
	MW-12	normal	N/A	6.87-8.07	7.4	No	N/A	N/A
	MW-OW	normal	98	6.87-8.07	7.7	No	+0.01	No
SC	MW-9R	N/A	98	763.5	1010	Yes	17.75	Yes
	MW-11	normal	96.16	763.5	646	No	N/A	N/A
	MW-12	normal	96.16	763.5	699	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	N/A	N/A	-3.55	Yes
Chloride	MW-9R	N/A	N/A	N/A	19	N/A	+3	No
	MW-11	normal	97.5	10.0	2	No	N/A	N/A
	MW-12	normal	97.5	10.0	3	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	6	N/A	-1.0	No
Sulfate	MW-9R	non-normal	N/A	N/A	61	No	-2.78	No
	MW-11	non-normal	N/A	N/A	41	No	N/A	N/A
	MW-12	non-normal	N/A	N/A	31	No	N/A	N/A
	MW-OW	non-normal	N/A	N/A	6	No	-0.32	No
Nitrate+Nitrite	MW-9R	N/A	98	N/A	0.63	N/A	-0.45	Yes
Iron	MW-11	N/A	N/A	N/A	*0.2*			
	MW-12	N/A	N/A	N/A	*0.3*			
	MW-OW	N/A	N/A	N/A	*ND*	No	0.03	No
Zinc	MW-12	normal	N/A	0.09	*0.016*	No		
	MW-OW	normal	N/A	0.09	*0.653*	Yes		
cis-1,2-Dichloroethene	MW-9R	N/A	N/A	N/A	5.1	No	0.48	No
	MW-OW	N/A	N/A	N/A	11	N/A	N/A	N/A
Ethyl benzene	MW-OW	N/A	98	N/A	0.11	No	0	No
Styrene	MW-OW	N/A	98	N/A	0.15	No	0	No
Tetrachloroethene	MW-9R	N/A	N/A	N/A	0.59	No	-0.01	No

Notes:
N/A = Not analyzed
ND = Non-detect
N/A = Not applicable
? = Insufficient data for test

FIGURES

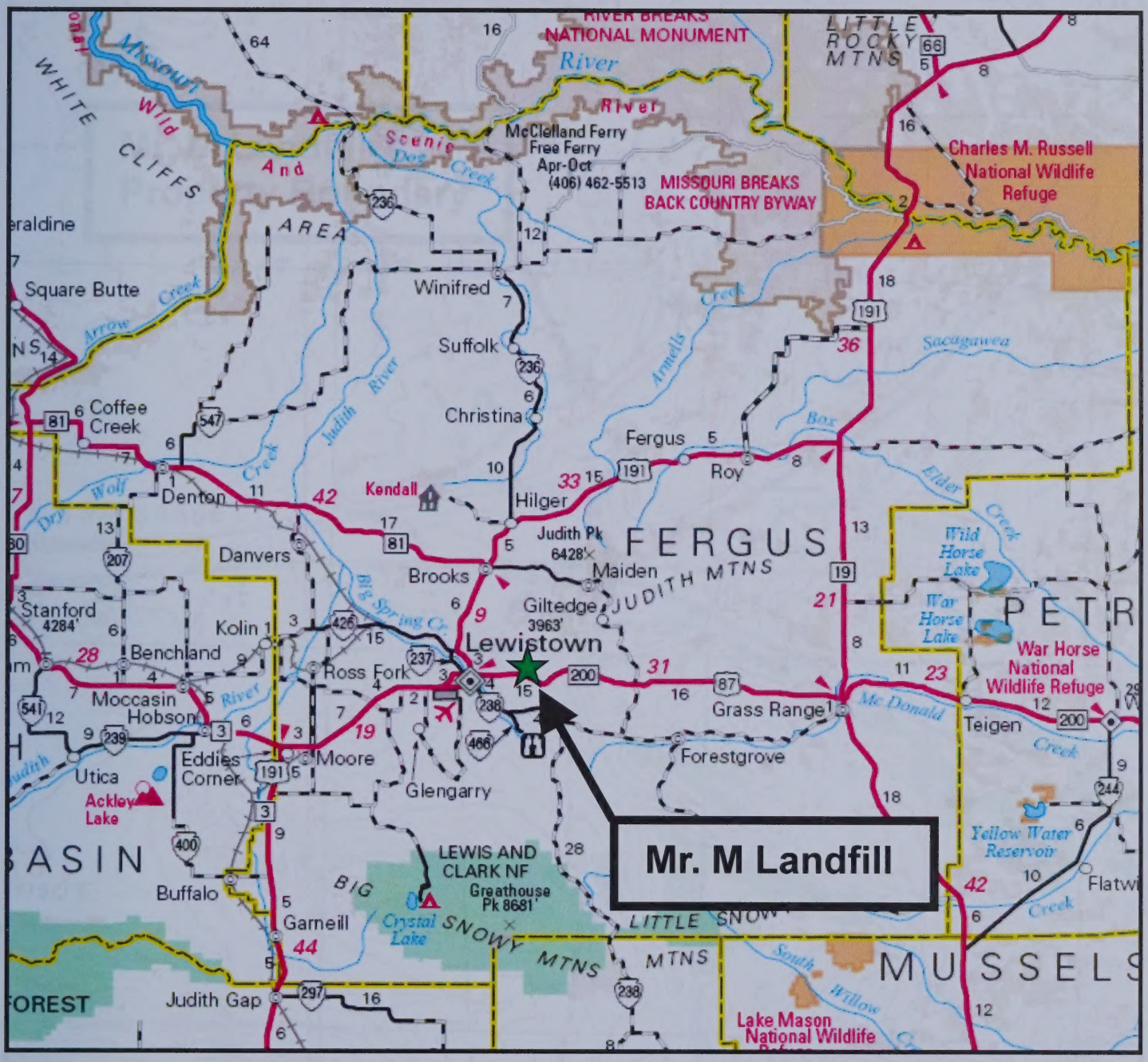


Figure 1: Location Map

Adapted from State of Montana Highway Map.

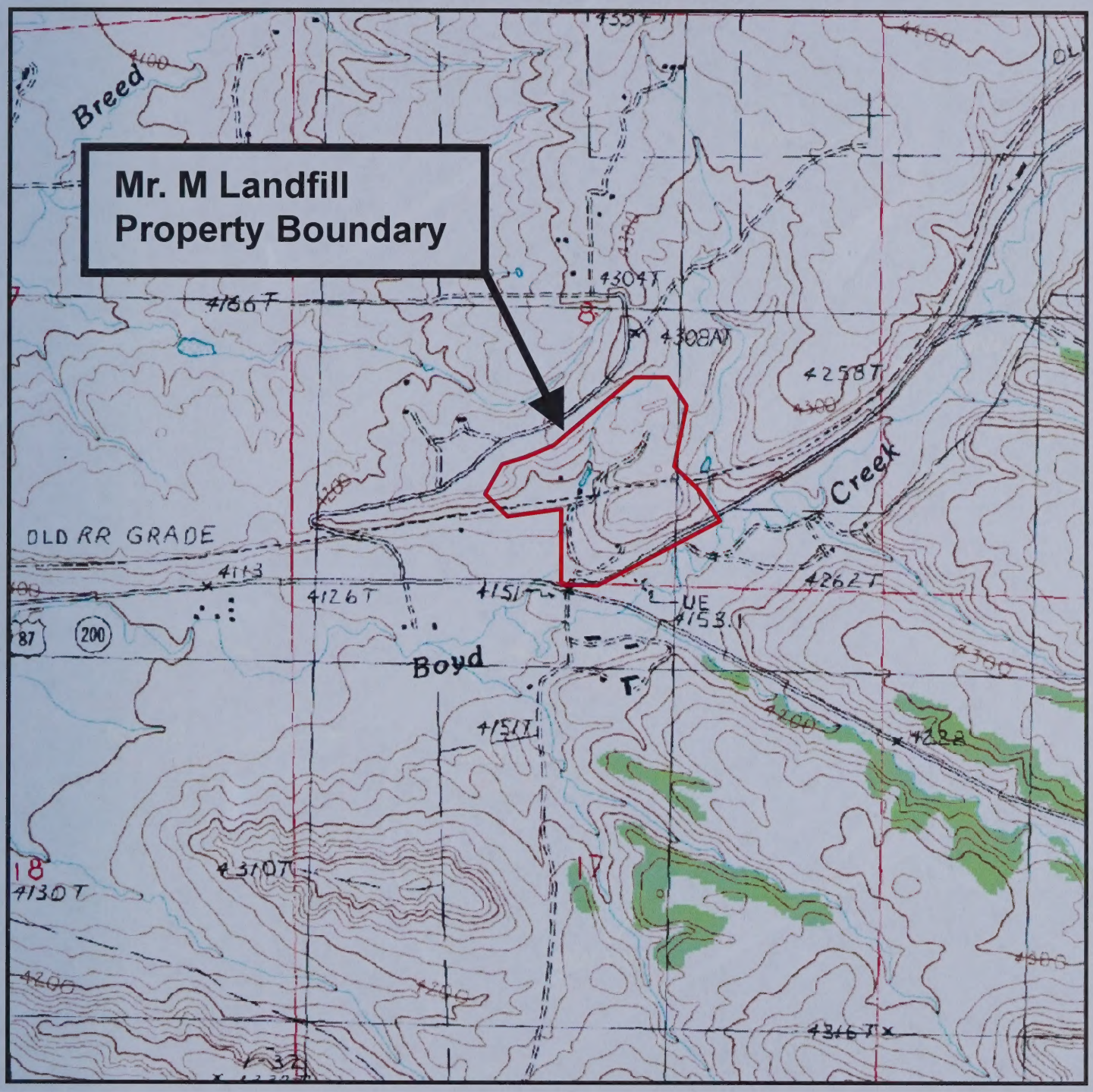


Figure 2: Facility Map

Adapted from USGS Pike Creek 24k Quadrangle.

Figure 3: Locations of Monitoring Points

Base Aerial Photo from 2012.

Figure 4: Groundwater Levels

Base Aerial Photo from 2012.

The reference elevations for MW-9R, MW-11, MW-12, and MW-OW are estimated from topographic contours and field observations.

APPENDIX A: LABORATORY ANALYTICAL AND QA/QC SUMMARY REPORT

ANALYTICAL SUMMARY REPORT

September 04, 2014

MT-DEQ Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

Work Order: H14060234 Quote ID: H876 - Landfill Parameters

Project Name: Mister M Landfill

Energy Laboratories Inc Helena MT received the following 6 samples for MT-DEQ Solid Waste Section on 6/11/2014 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H14060234-001	MW-I2	06/10/14 13:30	06/11/14	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH Preparation, Dissolved Filtration 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H14060234-002	MW-II	06/10/14 14:10	06/11/14	Aqueous	Same As Above
H14060234-003	MW-9r	06/10/14 14:45	06/11/14	Aqueous	Same As Above
H14060234-004	MW-OW	06/10/14 15:45	06/11/14	Aqueous	Same As Above
H14060234-005	MW-HW	06/10/14 16:15	06/11/14	Aqueous	Same As Above
H14060234-006	TB 4073	06/10/14 13:30	06/11/14	Trip Blank	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Amanda Blackburn
Assistant Branch Manager - Helena, MT

Digitally signed by
Amanda B. Blackburn
Date: 2014.09.04 15:19:35 -06:00

CLIENT: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Work Order: H14060234

Revised Date: 09/04/14
Report Date: 07/01/14

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Per email request from J.Collins, sample H14060234-003 was labeled MW-9V. This sample should be MW-9r. Sample H14060234-005 was labeled MW-MW. This sample should be MW-HW. The report was revised to correct the sample ID's. abb 9/4/14

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-001
Client Sample ID: MW-I2

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 13:30
DateReceived: 06/11/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.	H	0.1		A4500-H B	06/12/14 09:15 / SRW
Conductivity @ 25 C	699	umhos/cm		1		A2510 B	06/12/14 09:15 / SRW
INORGANICS							
Chloride	3	mg/L		1		E300.0	06/12/14 17:04 / SRW
Sulfate	31	mg/L		1		E300.0	06/12/14 17:04 / SRW
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	06/12/14 15:56 / cmm
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	06/26/14 02:19 / dck
Arsenic	0.003	mg/L		0.001		SW6020	06/20/14 23:06 / dck
Barium	0.043	mg/L		0.003		SW6020	06/20/14 23:06 / dck
Beryllium	ND	mg/L		0.0008		SW6020	06/20/14 23:06 / dck
Cadmium	0.00009	mg/L		0.00003		SW6020	06/20/14 23:06 / dck
Chromium	ND	mg/L		0.01		SW6020	06/20/14 23:06 / dck
Cobalt	ND	mg/L		0.01		SW6020	06/20/14 23:06 / dck
Copper	ND	mg/L		0.002		SW6020	06/20/14 23:06 / dck
Iron	0.30	mg/L		0.02		SW6020	06/20/14 23:06 / dck
Lead	ND	mg/L		0.0003		SW6020	06/20/14 23:06 / dck
Nickel	ND	mg/L		0.002		SW6020	06/20/14 23:06 / dck
Selenium	ND	mg/L		0.001		SW6020	06/20/14 23:06 / dck
Silver	ND	mg/L		0.0002		SW6020	06/20/14 23:06 / dck
Thallium	ND	mg/L		0.0002		SW6020	06/20/14 23:06 / dck
Vanadium	ND	mg/L		0.1		SW6020	06/20/14 23:06 / dck
Zinc	0.016	mg/L		0.008		SW6020	06/20/14 23:06 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/18/14 20:43 / eli-b27
Acrylonitrile	ND	ug/L		3.0		SW8260B	06/18/14 20:43 / eli-b27
Benzene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Bromoform	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Bromomethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/18/14 20:43 / eli-b27
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Chloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Chloroform	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Chloromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/18/14 20:43 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-001
Client Sample ID: MW-I2

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 13:30
DateReceived: 06/11/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Dibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/18/14 20:43 / eli-b27
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
cis-1,2-Dichloroethene	0.30	ug/L	J	0.50		SW8260B	06/18/14 20:43 / eli-b27
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 20:43 / eli-b27
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 20:43 / eli-b27
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
2-Hexanone	ND	ug/L		20		SW8260B	06/18/14 20:43 / eli-b27
Iodomethane	ND	ug/L		1.0		SW8260B	06/18/14 20:43 / eli-b27
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/18/14 20:43 / eli-b27
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/18/14 20:43 / eli-b27
Methylene chloride	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Styrene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Toluene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Trichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/18/14 20:43 / eli-b27
Vinyl chloride	ND	ug/L		0.40		SW8260B	06/18/14 20:43 / eli-b27
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/18/14 20:43 / eli-b27
o-Xylene	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Xylenes, Total	ND	ug/L		0.50		SW8260B	06/18/14 20:43 / eli-b27
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	06/18/14 20:43 / eli-b27
Surr: Dibromofluoromethane	101	%REC		77-126		SW8260B	06/18/14 20:43 / eli-b27
Surr: p-Bromofluorobenzene	107	%REC		76-127		SW8260B	06/18/14 20:43 / eli-b27
Surr: Toluene-d8	106	%REC		79-122		SW8260B	06/18/14 20:43 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-002
Client Sample ID: MW-II

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 14:10
DateReceived: 06/11/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.	H	0.1		A4500-H B	06/12/14 09:17 / SRW
Conductivity @ 25 C	646	umhos/cm		1		A2510 B	06/12/14 09:17 / SRW
INORGANICS							
Chloride	2	mg/L		1		E300.0	06/12/14 17:15 / SRW
Sulfate	41	mg/L		1		E300.0	06/12/14 17:15 / SRW
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.04	mg/L		0.01		E353.2	06/12/14 15:57 / cmm
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	06/26/14 02:36 / dck
Arsenic	ND	mg/L		0.001		SW6020	06/20/14 23:23 / dck
Barium	0.034	mg/L		0.003		SW6020	06/20/14 23:23 / dck
Beryllium	ND	mg/L		0.0008		SW6020	06/20/14 23:23 / dck
Cadmium	0.00005	mg/L		0.00003		SW6020	06/20/14 23:23 / dck
Chromium	ND	mg/L		0.01		SW6020	06/20/14 23:23 / dck
Cobalt	ND	mg/L		0.01		SW6020	06/20/14 23:23 / dck
Copper	ND	mg/L		0.002		SW6020	06/20/14 23:23 / dck
Iron	0.20	mg/L		0.02		SW6020	06/20/14 23:23 / dck
Lead	ND	mg/L		0.0003		SW6020	06/20/14 23:23 / dck
Nickel	ND	mg/L		0.002		SW6020	06/20/14 23:23 / dck
Selenium	ND	mg/L		0.001		SW6020	06/20/14 23:23 / dck
Silver	ND	mg/L		0.0002		SW6020	06/20/14 23:23 / dck
Thallium	ND	mg/L		0.0002		SW6020	06/20/14 23:23 / dck
Vanadium	ND	mg/L		0.1		SW6020	06/20/14 23:23 / dck
Zinc	ND	mg/L		0.008		SW6020	06/20/14 23:23 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/18/14 20:14 / eli-b27
Acrylonitrile	ND	ug/L		3.0		SW8260B	06/18/14 20:14 / eli-b27
Benzene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Bromoform	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Bromomethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/18/14 20:14 / eli-b27
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Chloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Chloroform	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Chloromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/18/14 20:14 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 14:10
DateReceived: 06/11/14
Matrix: Aqueous

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-002
Client Sample ID: MW-II

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Dibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/18/14 20:14 / eli-b27
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 20:14 / eli-b27
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 20:14 / eli-b27
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
2-Hexanone	ND	ug/L		20		SW8260B	06/18/14 20:14 / eli-b27
Iodomethane	ND	ug/L		1.0		SW8260B	06/18/14 20:14 / eli-b27
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/18/14 20:14 / eli-b27
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/18/14 20:14 / eli-b27
Methylene chloride	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Styrene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Toluene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Trichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/18/14 20:14 / eli-b27
Vinyl chloride	ND	ug/L		0.40		SW8260B	06/18/14 20:14 / eli-b27
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/18/14 20:14 / eli-b27
o-Xylene	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Xylenes, Total	ND	ug/L		0.50		SW8260B	06/18/14 20:14 / eli-b27
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	06/18/14 20:14 / eli-b27
Surr: Dibromofluoromethane	106	%REC		77-126		SW8260B	06/18/14 20:14 / eli-b27
Surr: p-Bromofluorobenzene	110	%REC		76-127		SW8260B	06/18/14 20:14 / eli-b27
Surr: Toluene-d8	106	%REC		79-122		SW8260B	06/18/14 20:14 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-003
Client Sample ID: MW-9r

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 14:45
DateReceived: 06/11/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.5	s.u.	H	0.1		A4500-H B	06/12/14 09:20 / SRW
Conductivity @ 25 C	1010	umhos/cm		1		A2510 B	06/12/14 09:20 / SRW
INORGANICS							
Chloride	19	mg/L		1		E300.0	06/12/14 17:26 / SRW
Sulfate	61	mg/L		1		E300.0	06/12/14 17:26 / SRW
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.63	mg/L		0.01		E353.2	06/12/14 16:01 / cmm
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	06/26/14 02:41 / dck
Arsenic	ND	mg/L		0.001		SW6020	06/20/14 23:28 / dck
Barium	0.050	mg/L		0.003		SW6020	06/20/14 23:28 / dck
Beryllium	ND	mg/L		0.0008		SW6020	06/20/14 23:28 / dck
Cadmium	0.00028	mg/L		0.00003		SW6020	06/20/14 23:28 / dck
Chromium	ND	mg/L		0.01		SW6020	06/20/14 23:28 / dck
Cobalt	ND	mg/L		0.01		SW6020	06/20/14 23:28 / dck
Copper	ND	mg/L		0.002		SW6020	06/20/14 23:28 / dck
Iron	ND	mg/L		0.02		SW6020	06/20/14 23:28 / dck
Lead	ND	mg/L		0.0003		SW6020	06/20/14 23:28 / dck
Nickel	0.006	mg/L		0.002		SW6020	06/20/14 23:28 / dck
Selenium	ND	mg/L		0.001		SW6020	06/20/14 23:28 / dck
Silver	ND	mg/L		0.0002		SW6020	06/20/14 23:28 / dck
Thallium	ND	mg/L		0.0002		SW6020	06/20/14 23:28 / dck
Vanadium	ND	mg/L		0.1		SW6020	06/20/14 23:28 / dck
Zinc	ND	mg/L		0.008		SW6020	06/20/14 23:28 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/18/14 19:46 / eli-b27
Acrylonitrile	ND	ug/L		3.0		SW8260B	06/18/14 19:46 / eli-b27
Benzene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Bromoform	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Bromomethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/18/14 19:46 / eli-b27
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Chloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Chloroform	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Chloromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/18/14 19:46 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-003
Client Sample ID: MW-9r

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 14:45
DateReceived: 06/11/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Dibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/18/14 19:46 / eli-b27
Dichlorodifluoromethane	0.24	ug/L	J	0.50		SW8260B	06/18/14 19:46 / eli-b27
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
cis-1,2-Dichloroethene	5.1	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 19:46 / eli-b27
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 19:46 / eli-b27
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
2-Hexanone	ND	ug/L		20		SW8260B	06/18/14 19:46 / eli-b27
Iodomethane	ND	ug/L		1.0		SW8260B	06/18/14 19:46 / eli-b27
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/18/14 19:46 / eli-b27
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/18/14 19:46 / eli-b27
Methylene chloride	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Styrene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Tetrachloroethene	0.59	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Toluene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Trichloroethene	0.28	ug/L	J	0.50		SW8260B	06/18/14 19:46 / eli-b27
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/18/14 19:46 / eli-b27
Vinyl chloride	ND	ug/L		0.40		SW8260B	06/18/14 19:46 / eli-b27
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/18/14 19:46 / eli-b27
o-Xylene	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Xylenes, Total	ND	ug/L		0.50		SW8260B	06/18/14 19:46 / eli-b27
Surr: 1,2-Dichloroethane-d4	109	%REC		70-130		SW8260B	06/18/14 19:46 / eli-b27
Surr: Dibromofluoromethane	109	%REC		77-126		SW8260B	06/18/14 19:46 / eli-b27
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	06/18/14 19:46 / eli-b27
Surr: Toluene-d8	106	%REC		79-122		SW8260B	06/18/14 19:46 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 15:45
DateReceived: 06/11/14
Matrix: Aqueous

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-004
Client Sample ID: MW-OW

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.7	s.u.	H	0.1		A4500-H B	06/12/14 09:22 / SRW
Conductivity @ 25 C	624	umhos/cm		1		A2510 B	06/12/14 09:22 / SRW
INORGANICS							
Chloride	6	mg/L		1		E300.0	06/12/14 17:37 / SRW
Sulfate	6	mg/L		1		E300.0	06/12/14 17:37 / SRW
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	06/12/14 16:04 / cmm
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	06/26/14 02:50 / dck
Arsenic	ND	mg/L		0.001		SW6020	06/24/14 19:25 / dck
Barium	0.075	mg/L		0.003		SW6020	06/24/14 19:25 / dck
Beryllium	ND	mg/L		0.0008		SW6020	06/24/14 19:25 / dck
Cadmium	0.00012	mg/L		0.00003		SW6020	06/24/14 19:25 / dck
Chromium	ND	mg/L		0.01		SW6020	06/24/14 19:25 / dck
Cobalt	ND	mg/L		0.01		SW6020	06/24/14 19:25 / dck
Copper	ND	mg/L		0.002		SW6020	06/24/14 19:25 / dck
Iron	ND	mg/L		0.02		SW6020	06/24/14 19:25 / dck
Lead	ND	mg/L		0.0003		SW6020	06/24/14 19:25 / dck
Nickel	ND	mg/L		0.002		SW6020	06/24/14 19:25 / dck
Selenium	ND	mg/L		0.001		SW6020	06/24/14 19:25 / dck
Silver	ND	mg/L		0.0002		SW6020	06/24/14 19:25 / dck
Thallium	ND	mg/L		0.0002		SW6020	06/24/14 19:25 / dck
Vanadium	ND	mg/L		0.1		SW6020	06/24/14 19:25 / dck
Zinc	0.653	mg/L		0.008		SW6020	06/24/14 19:25 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/18/14 19:17 / eli-b27
Acrylonitrile	ND	ug/L		3.0		SW8260B	06/18/14 19:17 / eli-b27
Benzene	0.47	ug/L	J	0.50		SW8260B	06/18/14 19:17 / eli-b27
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Bromoform	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Bromomethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/18/14 19:17 / eli-b27
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Chloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Chloroform	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Chloromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/18/14 19:17 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-004
Client Sample ID: MW-OW

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 15:45
DateReceived: 06/11/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Dibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/18/14 19:17 / eli-b27
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
cis-1,2-Dichloroethene	11	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 19:17 / eli-b27
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 19:17 / eli-b27
Ethylbenzene	0.11	ug/L	J	0.50		SW8260B	06/18/14 19:17 / eli-b27
2-Hexanone	ND	ug/L		20		SW8260B	06/18/14 19:17 / eli-b27
Iodomethane	ND	ug/L		1.0		SW8260B	06/18/14 19:17 / eli-b27
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/18/14 19:17 / eli-b27
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/18/14 19:17 / eli-b27
Methylene chloride	0.26	ug/L	JT	0.50		SW8260B	06/18/14 19:17 / eli-b27
Styrene	0.15	ug/L	J	0.50		SW8260B	06/18/14 19:17 / eli-b27
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Toluene	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,1,1-Trichloroethane	0.20	ug/L	J	0.50		SW8260B	06/18/14 19:17 / eli-b27
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Trichloroethene	0.13	ug/L	J	0.50		SW8260B	06/18/14 19:17 / eli-b27
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 19:17 / eli-b27
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/18/14 19:17 / eli-b27
Vinyl chloride	0.37	ug/L	J	0.40		SW8260B	06/18/14 19:17 / eli-b27
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/18/14 19:17 / eli-b27
o-Xylene	0.11	ug/L	J	0.50		SW8260B	06/18/14 19:17 / eli-b27
Xylenes, Total	0.11	ug/L	J	0.50		SW8260B	06/18/14 19:17 / eli-b27
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	06/18/14 19:17 / eli-b27
Surr: Dibromofluoromethane	109	%REC		77-126		SW8260B	06/18/14 19:17 / eli-b27
Surr: p-Bromofluorobenzene	112	%REC		76-127		SW8260B	06/18/14 19:17 / eli-b27
Surr: Toluene-d8	106	%REC		79-122		SW8260B	06/18/14 19:17 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
T - The analyte was detected in the associated trip blank.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-005
Client Sample ID: MW-HW

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 16:15
DateReceived: 06/11/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.	H	0.1		A4500-H B	06/12/14 09:24 / SRW
Conductivity @ 25 C	773	umhos/cm		1		A2510 B	06/12/14 09:24 / SRW
INORGANICS							
Chloride	7	mg/L		1		E300.0	06/12/14 17:48 / SRW
Sulfate	30	mg/L		1		E300.0	06/12/14 17:48 / SRW
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	06/12/14 16:05 / cmm
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	06/26/14 02:54 / dck
Arsenic	ND	mg/L		0.001		SW6020	06/20/14 23:36 / dck
Barium	0.063	mg/L		0.003		SW6020	06/20/14 23:36 / dck
Beryllium	ND	mg/L		0.0008		SW6020	06/20/14 23:36 / dck
Cadmium	ND	mg/L		0.00003		SW6020	06/20/14 23:36 / dck
Chromium	ND	mg/L		0.01		SW6020	06/20/14 23:36 / dck
Cobalt	ND	mg/L		0.01		SW6020	06/20/14 23:36 / dck
Copper	0.003	mg/L		0.002		SW6020	06/20/14 23:36 / dck
Iron	ND	mg/L		0.02		SW6020	06/20/14 23:36 / dck
Lead	ND	mg/L		0.0003		SW6020	06/20/14 23:36 / dck
Nickel	ND	mg/L		0.002		SW6020	06/20/14 23:36 / dck
Selenium	ND	mg/L		0.001		SW6020	06/20/14 23:36 / dck
Silver	ND	mg/L		0.0002		SW6020	06/20/14 23:36 / dck
Thallium	ND	mg/L		0.0002		SW6020	06/20/14 23:36 / dck
Vanadium	ND	mg/L		0.1		SW6020	06/20/14 23:36 / dck
Zinc	0.066	mg/L		0.008		SW6020	06/20/14 23:36 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/18/14 18:49 / eli-b27
Acrylonitrile	ND	ug/L		3.0		SW8260B	06/18/14 18:49 / eli-b27
Benzene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Bromodichloromethane	0.38	ug/L	J	0.50		SW8260B	06/18/14 18:49 / eli-b27
Bromoform	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Bromomethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/18/14 18:49 / eli-b27
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Chlorodibromomethane	0.54	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Chloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Chloroform	1.7	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Chloromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/18/14 18:49 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-005
Client Sample ID: MW-HW

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 16:15
DateReceived: 06/11/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Dibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/18/14 18:49 / eli-b27
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 18:49 / eli-b27
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 18:49 / eli-b27
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
2-Hexanone	ND	ug/L		20		SW8260B	06/18/14 18:49 / eli-b27
Iodomethane	ND	ug/L		1.0		SW8260B	06/18/14 18:49 / eli-b27
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/18/14 18:49 / eli-b27
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/18/14 18:49 / eli-b27
Methylene chloride	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Styrene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Toluene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Trichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/18/14 18:49 / eli-b27
Vinyl chloride	ND	ug/L		0.40		SW8260B	06/18/14 18:49 / eli-b27
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/18/14 18:49 / eli-b27
o-Xylene	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Xylenes, Total	ND	ug/L		0.50		SW8260B	06/18/14 18:49 / eli-b27
Surr: 1,2-Dichloroethane-d4	109	%REC		70-130		SW8260B	06/18/14 18:49 / eli-b27
Surr: Dibromofluoromethane	111	%REC		77-126		SW8260B	06/18/14 18:49 / eli-b27
Surr: p-Bromofluorobenzene	111	%REC		76-127		SW8260B	06/18/14 18:49 / eli-b27
Surr: Toluene-d8	0	%REC	S	79-122		SW8260B	06/18/14 18:49 / eli-b27

- The surrogate Toluene d8 is not recovered from this sample. A confirmation run provided similar results indicating this is a due to sample matrix.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 13:30
DateReceived: 06/11/14
Matrix: Trip Blank

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-006
Client Sample ID: TB 4073

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/18/14 18:20 / eli-b27
Acrylonitrile	ND	ug/L		3.0		SW8260B	06/18/14 18:20 / eli-b27
Benzene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Bromoform	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Bromomethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/18/14 18:20 / eli-b27
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Chloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Chloroform	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Chloromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/18/14 18:20 / eli-b27
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Dibromomethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/18/14 18:20 / eli-b27
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 18:20 / eli-b27
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	06/18/14 18:20 / eli-b27
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
2-Hexanone	ND	ug/L		20		SW8260B	06/18/14 18:20 / eli-b27
Iodomethane	ND	ug/L		1.0		SW8260B	06/18/14 18:20 / eli-b27
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/18/14 18:20 / eli-b27
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/18/14 18:20 / eli-b27
Methylene chloride	0.23	ug/L	J	0.50		SW8260B	06/18/14 18:20 / eli-b27
Styrene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Toluene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Trichloroethene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H14060234-006
Client Sample ID: TB 4073

Revised Date: 09/04/14
Report Date: 07/01/14
Collection Date: 06/10/14 13:30
DateReceived: 06/11/14
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/18/14 18:20 / eli-b27
Vinyl chloride	ND	ug/L		0.40		SW8260B	06/18/14 18:20 / eli-b27
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/18/14 18:20 / eli-b27
o-Xylene	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Xylenes, Total	ND	ug/L		0.50		SW8260B	06/18/14 18:20 / eli-b27
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	06/18/14 18:20 / eli-b27
Surr: Dibromofluoromethane	107	%REC		77-126		SW8260B	06/18/14 18:20 / eli-b27
Surr: p-Bromofluorobenzene	113	%REC		76-127		SW8260B	06/18/14 18:20 / eli-b27
Surr: Toluene-d8	106	%REC		79-122		SW8260B	06/18/14 18:20 / eli-b27

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B										Batch: R97926
Lab ID: SC 150		Initial Calibration Verification Standard				Run: PHSC_101-H_140612A				06/12/14 08:40
Conductivity @ 25 C		150	umhos/cm	1.0	100	90	110			
Lab ID: SC 5000		Initial Calibration Verification Standard				Run: PHSC_101-H_140612A				06/12/14 08:43
Conductivity @ 25 C		4890	umhos/cm	1.0	98	90	110			
Lab ID: SC 20000		Initial Calibration Verification Standard				Run: PHSC_101-H_140612A				06/12/14 08:45
Conductivity @ 25 C		19600	umhos/cm	1.0	98	90	110			
Lab ID: SC 2ND 1000		Laboratory Control Sample				Run: PHSC_101-H_140612A				06/12/14 08:48
Conductivity @ 25 C		976	umhos/cm	1.0	97	90	110			
Lab ID: H14060235-001ADUP		Sample Duplicate				Run: PHSC_101-H_140612A				06/12/14 08:58
Conductivity @ 25 C		4080	umhos/cm	1.0				0.2	10	
Lab ID: H14060235-008ADUP		Sample Duplicate				Run: PHSC_101-H_140612A				06/12/14 09:29
Conductivity @ 25 C		540	umhos/cm	1.0				0.2	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B									Analytical Run: PHSC_101-H_140612A	
Lab ID: pH 7		Initial Calibration Verification Standard							06/12/14 08:38	
pH		7.0	s.u.	0.1	100	98	102			
Method: A4500-H B									Batch: R97926	
Lab ID: H14060235-001ADUP		Sample Duplicate				Run: PHSC_101-H_140612A			06/12/14 08:58	
pH		7.72	s.u.	0.10				0.1	3	
Lab ID: H14060235-008ADUP		Sample Duplicate				Run: PHSC_101-H_140612A			06/12/14 09:29	
pH		8.86	s.u.	0.10				0.1	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC102-H_140612A	
Lab ID: ICV	2	Initial Calibration Verification Standard							06/12/14 15:13	
Chloride		100	mg/L	1.0	103	90	110			
Sulfate		420	mg/L	1.0	105	90	110			
Lab ID: CCV061214-1	2	Continuing Calibration Verification Standard							06/12/14 15:57	
Chloride		110	mg/L	1.0	107	90	110			
Sulfate		420	mg/L	1.0	105	90	110			
Method: E300.0									Batch: R97977	
Lab ID: ICB	2	Method Blank				Run: IC102-H_140612A			06/12/14 15:24	
Chloride		0.04	mg/L	0.008						
Sulfate		0.2	mg/L	0.08						
Lab ID: LFB	2	Laboratory Fortified Blank				Run: IC102-H_140612A			06/12/14 15:35	
Chloride		46	mg/L	1.0	92	90	110			
Sulfate		200	mg/L	1.0	98	90	110			
Lab ID: H14060216-001CMS	2	Sample Matrix Spike				Run: IC102-H_140612A			06/12/14 16:31	
Chloride		79	mg/L	1.0	100	90	110			
Sulfate		380	mg/L	1.0	110	90	110			
Lab ID: H14060216-001CMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_140612A			06/12/14 16:42	
Chloride		80	mg/L	1.0	101	90	110	0.9	20	
Sulfate		380	mg/L	1.0	111	90	110	0.4	20	S
Lab ID: H14060235-003AMS	2	Sample Matrix Spike				Run: IC102-H_140612A			06/12/14 19:06	
Chloride		78	mg/L	1.0	99	90	110			
Sulfate		660	mg/L	1.0	108	90	110			
Lab ID: H14060235-003AMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_140612A			06/12/14 19:17	
Chloride		79	mg/L	1.0	101	90	110	1.2	20	
Sulfate		670	mg/L	1.0	111	90	110	0.9	20	S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA203-HE_140612E	
Lab ID: ICV	Initial Calibration Verification Standard									06/12/14 15:37
Nitrogen, Nitrate+Nitrite as N		0.974	mg/L	0.010	97	90	110			
Lab ID: CCV	Continuing Calibration Verification Standard									06/12/14 15:39
Nitrogen, Nitrate+Nitrite as N		0.487	mg/L	0.010	97	90	110			
Lab ID: ICB	Initial Calibration Blank, Instrument Blank									06/12/14 15:40
Nitrogen, Nitrate+Nitrite as N		0.000650	mg/L	0.010		0	0			
Lab ID: CCV	Continuing Calibration Verification Standard									06/12/14 16:00
Nitrogen, Nitrate+Nitrite as N		0.478	mg/L	0.010	96	90	110			
Method: E353.2										Batch: R97969
Lab ID: LFB	Laboratory Fortified Blank					Run: FIA203-HE_140612E				06/12/14 15:38
Nitrogen, Nitrate+Nitrite as N		0.948	mg/L	0.011	95	90	110			
Lab ID: MBLK	Method Blank					Run: FIA203-HE_140612E				06/12/14 15:43
Nitrogen, Nitrate+Nitrite as N		0.003	mg/L	0.001						
Lab ID: H14060234-003CMS	Sample Matrix Spike					Run: FIA203-HE_140612E				06/12/14 16:02
Nitrogen, Nitrate+Nitrite as N		1.54	mg/L	0.011	90	90	110			
Lab ID: H14060234-003CMSD	Sample Matrix Spike Duplicate					Run: FIA203-HE_140612E				06/12/14 16:03
Nitrogen, Nitrate+Nitrite as N		1.54	mg/L	0.011	91	90	110	0.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS204-B_140620B	
Lab ID: ICV STD	15	Initial Calibration Verification Standard								06/20/14 14:56
Arsenic		0.0602	mg/L	0.0010	100	90	110			
Barium		0.0589	mg/L	0.0010	98	90	110			
Beryllium		0.0300	mg/L	0.0010	100	90	110			
Cadmium		0.0319	mg/L	0.0010	106	90	110			
Chromium		0.0598	mg/L	0.0010	100	90	110			
Cobalt		0.0604	mg/L	0.0010	101	90	110			
Copper		0.0611	mg/L	0.0010	102	90	110			
Iron		0.315	mg/L	0.0010	105	90	110			
Lead		0.0595	mg/L	0.0010	99	90	110			
Nickel		0.0604	mg/L	0.0010	101	90	110			
Selenium		0.0622	mg/L	0.0010	104	90	110			
Silver		0.0298	mg/L	0.0010	99	90	110			
Thallium		0.0591	mg/L	0.0010	99	90	110			
Vanadium		0.0588	mg/L	0.0010	98	90	110			
Zinc		0.0617	mg/L	0.0010	103	90	110			
Lab ID: ICV STD	15	Initial Calibration Verification Standard								06/20/14 19:48
Arsenic		0.0606	mg/L	0.0010	101	90	110			
Barium		0.0580	mg/L	0.0010	97	90	110			
Beryllium		0.0302	mg/L	0.0010	101	90	110			
Cadmium		0.0310	mg/L	0.0010	103	90	110			
Chromium		0.0599	mg/L	0.0010	100	90	110			
Cobalt		0.0610	mg/L	0.0010	102	90	110			
Copper		0.0619	mg/L	0.0010	103	90	110			
Iron		0.310	mg/L	0.0010	104	90	110			
Lead		0.0588	mg/L	0.0010	98	90	110			
Nickel		0.0605	mg/L	0.0010	101	90	110			
Selenium		0.0607	mg/L	0.0010	101	90	110			
Silver		0.0297	mg/L	0.0010	99	90	110			
Thallium		0.0586	mg/L	0.0010	98	90	110			
Vanadium		0.0589	mg/L	0.0010	98	90	110			
Zinc		0.0629	mg/L	0.0010	105	90	110			
Method: SW6020										Batch: R98236
Lab ID: ICB	15	Method Blank				Run: ICPMS204-B_140620B				06/20/14 15:52
Arsenic		ND	mg/L	3E-05						
Barium		ND	mg/L	3E-05						
Beryllium		ND	mg/L	2E-05						
Cadmium		ND	mg/L	6E-06						
Chromium		ND	mg/L	3E-05						
Cobalt		ND	mg/L	2E-05						
Copper		ND	mg/L	3E-05						
Iron		0.002	mg/L	0.0002						
Lead		ND	mg/L	8E-06						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R98236
Lab ID: ICB	15	Method Blank				Run: ICPMS204-B_140620B				06/20/14 15:52
Nickel		ND	mg/L	6E-05						
Selenium		ND	mg/L	7E-05						
Silver		ND	mg/L	3E-05						
Thallium		ND	mg/L	1E-05						
Vanadium		ND	mg/L	3E-05						
Zinc		ND	mg/L	0.0003						
Lab ID: LFB	15	Laboratory Fortified Blank				Run: ICPMS204-B_140620B				06/20/14 15:56
Arsenic		0.0529	mg/L	0.0010	106	80	120			
Barium		0.0518	mg/L	0.0010	104	80	120			
Beryllium		0.0512	mg/L	0.0010	102	80	120			
Cadmium		0.0541	mg/L	0.0010	108	80	120			
Chromium		0.0516	mg/L	0.0010	103	80	120			
Cobalt		0.0519	mg/L	0.0010	104	80	120			
Copper		0.0540	mg/L	0.0010	108	80	120			
Iron		0.156	mg/L	0.0010	103	80	120			
Lead		0.0512	mg/L	0.0010	102	80	120			
Nickel		0.0531	mg/L	0.0010	106	80	120			
Selenium		0.0537	mg/L	0.0010	107	80	120			
Silver		0.0208	mg/L	0.0010	104	80	120			
Thallium		0.0509	mg/L	0.0010	102	80	120			
Vanadium		0.0505	mg/L	0.0010	101	80	120			
Zinc		0.0552	mg/L	0.0010	110	80	120			
Lab ID: H14060234-001BMS	15	Sample Matrix Spike				Run: ICPMS204-B_140620B				06/20/14 23:10
Arsenic		0.0563	mg/L	0.0010	107	75	125			
Barium		0.0928	mg/L	0.050	100	75	125			
Beryllium		0.0501	mg/L	0.0010	100	75	125			
Cadmium		0.0508	mg/L	0.0010	101	75	125			
Chromium		0.0519	mg/L	0.0050	104	75	125			
Cobalt		0.0518	mg/L	0.0050	102	75	125			
Copper		0.0527	mg/L	0.0050	104	75	125			
Iron		0.442	mg/L	0.020	95	75	125			
Lead		0.0515	mg/L	0.0010	103	75	125			
Nickel		0.0521	mg/L	0.0050	102	75	125			
Selenium		0.0519	mg/L	0.0010	104	75	125			
Silver		0.0205	mg/L	0.0010	103	75	125			
Thallium		0.0523	mg/L	0.00050	105	75	125			
Vanadium		0.0521	mg/L	0.010	104	75	125			
Zinc		0.0662	mg/L	0.010	100	75	125			
Lab ID: H14060234-001BMSD	15	Sample Matrix Spike Duplicate				Run: ICPMS204-B_140620B				06/20/14 23:14
Arsenic		0.0561	mg/L	0.0010	107	75	125	0.3	20	
Barium		0.0928	mg/L	0.050	100	75	125	0.0	20	
Beryllium		0.0501	mg/L	0.0010	100	75	125	0.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R98236
Lab ID: H14060234-001BMSD	15	Sample Matrix Spike Duplicate				Run: ICPMS204-B_140620B			06/20/14 23:14	
Cadmium		0.0504	mg/L	0.0010	101	75	125	0.7	20	
Chromium		0.0518	mg/L	0.0050	104	75	125	0.1	20	
Cobalt		0.0506	mg/L	0.0050	100	75	125	2.2	20	
Copper		0.0523	mg/L	0.0050	103	75	125	0.8	20	
Iron		0.447	mg/L	0.020	98	75	125	1.2	20	
Lead		0.0504	mg/L	0.0010	101	75	125	2.1	20	
Nickel		0.0520	mg/L	0.0050	102	75	125	0.1	20	
Selenium		0.0527	mg/L	0.0010	105	75	125	1.7	20	
Silver		0.0202	mg/L	0.0010	101	75	125	1.3	20	
Thallium		0.0513	mg/L	0.00050	103	75	125	1.8	20	
Vanadium		0.0518	mg/L	0.010	104	75	125	0.5	20	
Zinc		0.0649	mg/L	0.010	97	75	125	1.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Report Date: 06/30/14
Project: Mister M Landfill
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS204-B_140624B	
Lab ID: ICV STD	15	Initial Calibration Verification Standard							06/24/14 13:08	
Arsenic		0.0586	mg/L	0.0010	98	90	110			
Barium		0.0592	mg/L	0.0010	99	90	110			
Beryllium		0.0303	mg/L	0.0010	101	90	110			
Cadmium		0.0314	mg/L	0.0010	105	90	110			
Chromium		0.0593	mg/L	0.0010	99	90	110			
Cobalt		0.0596	mg/L	0.0010	99	90	110			
Copper		0.0609	mg/L	0.0010	102	90	110			
Iron		0.300	mg/L	0.0010	100	90	110			
Lead		0.0584	mg/L	0.0010	97	90	110			
Nickel		0.0601	mg/L	0.0010	100	90	110			
Selenium		0.0584	mg/L	0.0010	97	90	110			
Silver		0.0300	mg/L	0.0010	100	90	110			
Thallium		0.0581	mg/L	0.0010	97	90	110			
Vanadium		0.0582	mg/L	0.0010	97	90	110			
Zinc		0.0605	mg/L	0.0010	101	90	110			
Lab ID: ICV STD	15	Initial Calibration Verification Standard							06/24/14 18:50	
Arsenic		0.0605	mg/L	0.0010	101	90	110			
Barium		0.0594	mg/L	0.0010	99	90	110			
Beryllium		0.0308	mg/L	0.0010	103	90	110			
Cadmium		0.0320	mg/L	0.0010	106	90	110			
Chromium		0.0607	mg/L	0.0010	101	90	110			
Cobalt		0.0610	mg/L	0.0010	102	90	110			
Copper		0.0622	mg/L	0.0010	104	90	110			
Iron		0.309	mg/L	0.0010	103	90	110			
Lead		0.0593	mg/L	0.0010	99	90	110			
Nickel		0.0620	mg/L	0.0010	103	90	110			
Selenium		0.0606	mg/L	0.0010	101	90	110			
Silver		0.0300	mg/L	0.0010	100	90	110			
Thallium		0.0592	mg/L	0.0010	99	90	110			
Vanadium		0.0596	mg/L	0.0010	99	90	110			
Zinc		0.0634	mg/L	0.0010	106	90	110			
Method: SW6020									Batch: R98308	
Lab ID: ICB	15	Method Blank				Run: ICPMS204-B_140624B			06/24/14 14:01	
Arsenic		ND	mg/L	3E-05						
Barium		ND	mg/L	3E-05						
Beryllium		ND	mg/L	2E-05						
Cadmium		ND	mg/L	6E-06						
Chromium		ND	mg/L	3E-05						
Cobalt		ND	mg/L	2E-05						
Copper		ND	mg/L	3E-05						
Iron		0.001	mg/L	0.0002						
Lead		ND	mg/L	8E-06						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R98308
Lab ID: ICB	15	Method Blank				Run: ICPMS204-B_140624B				06/24/14 14:01
Nickel		ND	mg/L	6E-05						
Selenium		ND	mg/L	7E-05						
Silver		ND	mg/L	3E-05						
Thallium		ND	mg/L	1E-05						
Vanadium		ND	mg/L	3E-05						
Zinc		ND	mg/L	0.0003						
Lab ID: LFB	15	Laboratory Fortified Blank				Run: ICPMS204-B_140624B				06/24/14 14:06
Arsenic		0.0540	mg/L	0.0010	108	80	120			
Barium		0.0514	mg/L	0.0010	103	80	120			
Beryllium		0.0540	mg/L	0.0010	108	80	120			
Cadmium		0.0538	mg/L	0.0010	108	80	120			
Chromium		0.0527	mg/L	0.0010	105	80	120			
Cobalt		0.0524	mg/L	0.0010	105	80	120			
Copper		0.0552	mg/L	0.0010	110	80	120			
Iron		0.157	mg/L	0.0010	103	80	120			
Lead		0.0505	mg/L	0.0010	101	80	120			
Nickel		0.0543	mg/L	0.0010	109	80	120			
Selenium		0.0565	mg/L	0.0010	113	80	120			
Silver		0.0210	mg/L	0.0010	105	80	120			
Thallium		0.0503	mg/L	0.0010	101	80	120			
Vanadium		0.0517	mg/L	0.0010	103	80	120			
Zinc		0.0570	mg/L	0.0010	114	80	120			
Lab ID: MB-24903	15	Method Blank				Run: ICPMS204-B_140624B				06/24/14 19:21
Arsenic		ND	mg/L	3E-05						
Barium		ND	mg/L	3E-05						
Beryllium		ND	mg/L	2E-05						
Cadmium		6E-06	mg/L	6E-06						
Chromium		4E-05	mg/L	3E-05						
Cobalt		2E-05	mg/L	2E-05						
Copper		8E-05	mg/L	3E-05						
Iron		0.003	mg/L	0.0002						
Lead		ND	mg/L	8E-06						
Nickel		ND	mg/L	6E-05						
Selenium		ND	mg/L	7E-05						
Silver		ND	mg/L	3E-05						
Thallium		ND	mg/L	1E-05						
Vanadium		ND	mg/L	3E-05						
Zinc		0.002	mg/L	0.0003						
Lab ID: H14060234-004BMS	15	Sample Matrix Spike				Run: ICPMS204-B_140624B				06/24/14 19:34
Arsenic		0.0528	mg/L	0.0010	105	75	125			
Barium		0.123	mg/L	0.050	96	75	125			
Beryllium		0.0516	mg/L	0.0010	103	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R98308
Lab ID: H14060234-004BMS	15	Sample Matrix Spike				Run: ICPMS204-B_140624B				06/24/14 19:34
Cadmium		0.0501	mg/L	0.0010	100	75	125			
Chromium		0.0520	mg/L	0.0050	104	75	125			
Cobalt		0.0506	mg/L	0.0050	100	75	125			
Copper		0.0521	mg/L	0.0050	103	75	125			
Iron		0.159	mg/L	0.020	100	75	125			
Lead		0.0506	mg/L	0.0010	101	75	125			
Nickel		0.0528	mg/L	0.0050	103	75	125			
Selenium		0.0531	mg/L	0.0010	106	75	125			
Silver		0.0198	mg/L	0.0010	99	75	125			
Thallium		0.0512	mg/L	0.00050	102	75	125			
Vanadium		0.0514	mg/L	0.010	103	75	125			
Zinc		0.695	mg/L	0.010		75	125			A
Lab ID: H14060234-004BMSD	15	Sample Matrix Spike Duplicate				Run: ICPMS204-B_140624B				06/24/14 19:38
Arsenic		0.0531	mg/L	0.0010	106	75	125	0.6	20	
Barium		0.125	mg/L	0.050	99	75	125	1.0	20	
Beryllium		0.0526	mg/L	0.0010	105	75	125	1.8	20	
Cadmium		0.0509	mg/L	0.0010	102	75	125	1.5	20	
Chromium		0.0519	mg/L	0.0050	104	75	125	0.2	20	
Cobalt		0.0513	mg/L	0.0050	101	75	125	1.3	20	
Copper		0.0523	mg/L	0.0050	103	75	125	0.4	20	
Iron		0.162	mg/L	0.020	102	75	125	1.6	20	
Lead		0.0508	mg/L	0.0010	101	75	125	0.2	20	
Nickel		0.0529	mg/L	0.0050	104	75	125	0.3	20	
Selenium		0.0544	mg/L	0.0010	109	75	125	2.3	20	
Silver		0.0201	mg/L	0.0010	101	75	125	1.8	20	
Thallium		0.0516	mg/L	0.00050	103	75	125	1.0	20	
Vanadium		0.0516	mg/L	0.010	103	75	125	0.5	20	
Zinc		0.692	mg/L	0.010		75	125	0.4	20	A

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS204-B_140625A	
Lab ID: ICV STD		Initial Calibration Verification Standard								06/25/14 10:57
Antimony		0.0614	mg/L	0.0010	102	90	110			
Lab ID: ICV STD		Initial Calibration Verification Standard								06/25/14 14:43
Antimony		0.0605	mg/L	0.0010	101	90	110			
Method: SW6020										Batch: R98360
Lab ID: ICB		Method Blank				Run: ICPMS204-B_140625A				06/26/14 01:56
Antimony		ND	mg/L	1E-05						
Lab ID: LFB		Laboratory Fortified Blank				Run: ICPMS204-B_140625A				06/26/14 02:01
Antimony		0.0506	mg/L	0.0010	101	80	120			
Lab ID: MB-25059		Method Blank				Run: ICPMS204-B_140625A				06/26/14 02:14
Antimony		ND	mg/L	1E-05						
Lab ID: H14060234-001BMS		Sample Matrix Spike				Run: ICPMS204-B_140625A				06/26/14 02:23
Antimony		0.0508	mg/L	0.0010	102	75	125			
Lab ID: H14060234-001BMSD		Sample Matrix Spike Duplicate				Run: ICPMS204-B_140625A				06/26/14 02:28
Antimony		0.0511	mg/L	0.0010	102	75	125	0.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: B_R225719
Lab ID: CCV_061814	54	Continuing Calibration Verification Standard								06/18/14 12:37
trans-1,4-Dichloro-2-butene		3.85	ug/L	1.0	77	70	130			
Acetone		51.6	ug/L	20	103	70	130			
Acrylonitrile		54.8	ug/L	20	110	70	130			
Benzene		5.04	ug/L	1.0	101	70	130			
Bromochloromethane		5.16	ug/L	1.0	103	70	130			
Bromodichloromethane		5.16	ug/L	1.0	103	70	130			
Bromoform		5.04	ug/L	1.0	101	70	130			
Bromomethane		6.36	ug/L	1.0	127	70	130			
Carbon disulfide		5.68	ug/L	1.0	114	70	130			
Carbon tetrachloride		5.56	ug/L	1.0	111	70	130			
Chlorobenzene		5.08	ug/L	1.0	102	70	130			
Chlorodibromomethane		5.00	ug/L	1.0	100	70	130			
Chloroethane		5.56	ug/L	1.0	111	70	130			
Chloroform		5.24	ug/L	1.0	105	80	120			
Chloromethane		4.96	ug/L	1.0	99	70	130			
1,2-Dibromo-3-chloropropane		4.76	ug/L	1.0	95	70	130			
1,2-Dibromoethane		5.00	ug/L	1.0	100	70	130			
Dibromomethane		5.04	ug/L	1.0	101	70	130			
1,2-Dichlorobenzene		5.08	ug/L	1.0	102	70	130			
1,4-Dichlorobenzene		5.16	ug/L	1.0	103	70	130			
Dichlorodifluoromethane		5.76	ug/L	1.0	115	70	130			
1,1-Dichloroethane		4.80	ug/L	1.0	96	70	130			
1,2-Dichloroethane		5.28	ug/L	1.0	106	70	130			
1,1-Dichloroethene		5.28	ug/L	1.0	106	80	120			
cis-1,2-Dichloroethene		5.04	ug/L	1.0	101	70	130			
trans-1,2-Dichloroethene		5.52	ug/L	1.0	110	70	130			
1,2-Dichloropropane		4.56	ug/L	1.0	91	80	120			
cis-1,3-Dichloropropene		4.88	ug/L	1.0	98	70	130			
trans-1,3-Dichloropropene		4.88	ug/L	1.0	98	70	130			
Ethylbenzene		5.32	ug/L	1.0	106	80	120			
2-Hexanone		50.4	ug/L	20	101	70	130			
Iodomethane		3.48	ug/L	1.0	70	70	130			
Methyl ethyl ketone		49.2	ug/L	20	98	70	130			
Methyl isobutyl ketone		49.6	ug/L	20	99	70	130			
Methylene chloride		4.88	ug/L	1.0	98	70	130			
Styrene		5.56	ug/L	1.0	111	70	130			
1,1,1,2-Tetrachloroethane		5.24	ug/L	1.0	105	70	130			
1,1,2,2-Tetrachloroethane		4.92	ug/L	1.0	98	70	130			
Tetrachloroethene		5.12	ug/L	1.0	102	70	130			
Toluene		5.16	ug/L	1.0	103	80	120			
1,1,1-Trichloroethane		5.52	ug/L	1.0	110	70	130			
1,1,2-Trichloroethane		5.16	ug/L	1.0	103	70	130			
Trichloroethene		5.12	ug/L	1.0	102	70	130			
Trichlorofluoromethane		6.16	ug/L	1.0	123	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: B_R225719	
Lab ID: CCV_061814	54	Continuing Calibration Verification Standard							06/18/14 12:37	
1,2,3-Trichloropropane		5.28	ug/L	1.0	106	70	130			
Vinyl acetate		4.80	ug/L	1.0	96	70	130			
Vinyl chloride		5.44	ug/L	1.0	109	80	120			
m+p-Xylenes		10.7	ug/L	1.0	107	70	130			
o-Xylene		5.40	ug/L	1.0	108	70	130			
Xylenes, Total		16.1	ug/L	1.0		0	0			
Surr: 1,2-Dichloroethane-d4				1.0	108	70	130			
Surr: Dibromofluoromethane				1.0	109	77	126			
Surr: p-Bromofluorobenzene				1.0	106	76	127			
Surr: Toluene-d8				1.0	106	79	122			
Method: SW8260B									Batch: B_R225719	
Lab ID: LCS_061814	53	Laboratory Control Sample				Run: SUB-B225719			06/18/14 13:06	
trans-1,4-Dichloro-2-butene		3.62	ug/L	1.0	72	50	142			
Acetone		46.4	ug/L	20	93	62	130			
Acrylonitrile		58.8	ug/L	20	118	60	130			
Benzene		5.04	ug/L	1.0	101	71	133			
Bromochloromethane		5.68	ug/L	1.0	114	68	131			
Bromodichloromethane		5.20	ug/L	1.0	104	67	138			
Bromoform		5.64	ug/L	1.0	113	64	136			
Bromomethane		7.24	ug/L	1.0	145	60	138			S
Carbon disulfide		5.60	ug/L	1.0	112	46	145			
Carbon tetrachloride		6.20	ug/L	1.0	124	61	144			
Chlorobenzene		4.88	ug/L	1.0	98	78	136			
Chlorodibromomethane		5.28	ug/L	1.0	106	72	136			
Chloroethane		5.56	ug/L	1.0	111	64	136			
Chloroform		5.64	ug/L	1.0	113	69	133			
Chloromethane		5.36	ug/L	1.0	107	63	149			
1,2-Dibromo-3-chloropropane		5.16	ug/L	1.0	103	63	125			
1,2-Dibromoethane		5.08	ug/L	1.0	102	75	131			
Dibromomethane		5.16	ug/L	1.0	103	72	133			
1,2-Dichlorobenzene		4.92	ug/L	1.0	98	78	129			
1,4-Dichlorobenzene		5.32	ug/L	1.0	106	78	131			
Dichlorodifluoromethane		6.16	ug/L	1.0	123	55	141			
1,1-Dichloroethane		5.28	ug/L	1.0	106	72	130			
1,2-Dichloroethane		5.28	ug/L	1.0	106	57	146			
1,1-Dichloroethene		5.44	ug/L	1.0	109	66	142			
cis-1,2-Dichloroethene		5.04	ug/L	1.0	101	74	133			
trans-1,2-Dichloroethene		5.68	ug/L	1.0	114	76	138			
1,2-Dichloropropane		4.64	ug/L	1.0	93	72	135			
cis-1,3-Dichloropropene		4.56	ug/L	1.0	91	75	132			
trans-1,3-Dichloropropene		5.04	ug/L	1.0	101	77	145			
Ethylbenzene		5.40	ug/L	1.0	108	78	131			
2-Hexanone		55.6	ug/L	20	111	72	131			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R225719
Lab ID: LCS_061814	53	Laboratory Control Sample				Run: SUB-B225719				06/18/14 13:06
Iodomethane		4.40	ug/L	1.0	88	66	132			
Methyl ethyl ketone		50.4	ug/L	20	101	55	145			
Methyl isobutyl ketone		55.6	ug/L	20	111	73	129			
Methylene chloride		4.88	ug/L	1.0	98	73	126			
Styrene		5.48	ug/L	1.0	110	76	134			
1,1,1,2-Tetrachloroethane		5.32	ug/L	1.0	106	75	135			
1,1,2,2-Tetrachloroethane		5.04	ug/L	1.0	101	72	132			
Tetrachloroethene		5.72	ug/L	1.0	114	78	137			
Toluene		5.12	ug/L	1.0	102	78	134			
1,1,1-Trichloroethane		5.96	ug/L	1.0	119	64	141			
1,1,2-Trichloroethane		5.12	ug/L	1.0	102	72	133			
Trichloroethene		5.00	ug/L	1.0	100	75	138			
Trichlorofluoromethane		6.40	ug/L	1.0	128	58	139			
1,2,3-Trichloropropane		5.04	ug/L	1.0	101	67	133			
Vinyl acetate		4.00	ug/L	1.0	80	31	124			
Vinyl chloride		5.68	ug/L	1.0	114	66	140			
m+p-Xylenes		10.5	ug/L	1.0	105	78	133			
o-Xylene		5.20	ug/L	1.0	104	79	136			
Surr: 1,2-Dichloroethane-d4				1.0	109	70	130			
Surr: Dibromofluoromethane				1.0	111	77	126			
Surr: p-Bromofluorobenzene				1.0	105	76	127			
Surr: Toluene-d8				1.0	106	79	122			
Lab ID: BLK_061814	54	Method Blank				Run: SUB-B225719				06/18/14 14:03
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Acetone		ND	ug/L	10						
Acrylonitrile		ND	ug/L	3.0						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	0.30						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R225719
Lab ID: BLK_061814	54	Method Blank				Run: SUB-B225719				06/18/14 14:03
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.30						
trans-1,3-Dichloropropene		ND	ug/L	0.30						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	0.40						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	109	70	130			
Surr: Dibromofluoromethane				1.0	110	77	126			
Surr: p-Bromofluorobenzene				1.0	115	76	127			
Surr: Toluene-d8				1.0	106	79	122			
Lab ID: B14061106-011D_MS	53	Sample Matrix Spike				Run: SUB-B225719				06/18/14 17:22
trans-1,4-Dichloro-2-butene		2.94	ug/L	1.0	59	50	142			
Acetone		43.2	ug/L	20	86	62	130			
Acrylonitrile		49.6	ug/L	20	99	60	130			
Benzene		5.16	ug/L	1.0	103	71	133			
Bromochloromethane		6.00	ug/L	1.0	120	68	131			
Bromodichloromethane		5.36	ug/L	1.0	107	67	138			
Bromoform		5.48	ug/L	1.0	110	64	136			
Bromomethane		6.64	ug/L	1.0	133	60	138			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R225719
Lab ID: B14061106-011D_MS	53	Sample Matrix Spike				Run: SUB-B225719				06/18/14 17:22
Carbon disulfide		5.44	ug/L	1.0	109	46	145			
Carbon tetrachloride		6.44	ug/L	1.0	129	61	144			
Chlorobenzene		5.00	ug/L	1.0	100	78	136			
Chlorodibromomethane		5.28	ug/L	1.0	106	72	136			
Chloroethane		5.40	ug/L	1.0	108	64	136			
Chloroform		5.84	ug/L	1.0	117	69	133			
Chloromethane		5.04	ug/L	1.0	101	63	149			
1,2-Dibromo-3-chloropropane		4.80	ug/L	1.0	96	63	125			
1,2-Dibromoethane		5.00	ug/L	1.0	100	75	131			
Dibromomethane		5.48	ug/L	1.0	110	72	133			
1,2-Dichlorobenzene		4.88	ug/L	1.0	98	78	129			
1,4-Dichlorobenzene		5.28	ug/L	1.0	106	78	131			
Dichlorodifluoromethane		5.76	ug/L	1.0	115	55	141			
1,1-Dichloroethane		5.56	ug/L	1.0	111	72	130			
1,2-Dichloroethane		5.44	ug/L	1.0	109	57	146			
1,1-Dichloroethene		5.64	ug/L	1.0	113	66	142			
cis-1,2-Dichloroethene		5.28	ug/L	1.0	106	74	133			
trans-1,2-Dichloroethene		5.72	ug/L	1.0	114	76	138			
1,2-Dichloropropane		4.76	ug/L	1.0	95	72	135			
cis-1,3-Dichloropropene		4.40	ug/L	1.0	88	75	132			
trans-1,3-Dichloropropene		4.80	ug/L	1.0	96	77	145			
Ethylbenzene		5.40	ug/L	1.0	108	78	131			
2-Hexanone		48.8	ug/L	20	98	72	131			
Iodomethane		3.56	ug/L	1.0	71	66	132			
Methyl ethyl ketone		46.4	ug/L	20	93	55	145			
Methyl isobutyl ketone		49.6	ug/L	20	99	73	129			
Methylene chloride		4.84	ug/L	1.0	97	73	126			
Styrene		5.44	ug/L	1.0	109	76	134			
1,1,1,2-Tetrachloroethane		5.44	ug/L	1.0	109	75	135			
1,1,2,2-Tetrachloroethane		5.04	ug/L	1.0	101	72	132			
Tetrachloroethene		5.76	ug/L	1.0	115	78	137			
Toluene		5.20	ug/L	1.0	104	78	134			
1,1,1-Trichloroethane		6.08	ug/L	1.0	122	64	141			
1,1,2-Trichloroethane		5.16	ug/L	1.0	103	72	133			
Trichloroethene		5.12	ug/L	1.0	102	75	138			
Trichlorofluoromethane		6.00	ug/L	1.0	120	58	139			
1,2,3-Trichloropropane		5.40	ug/L	1.0	108	67	133			
Vinyl acetate		4.56	ug/L	1.0	91	31	124			
Vinyl chloride		5.40	ug/L	1.0	108	66	140			
m+p-Xylenes		10.5	ug/L	1.0	105	78	133			
o-Xylene		5.36	ug/L	1.0	107	79	136			
Surr: 1,2-Dichloroethane-d4				1.0	108	70	130			
Surr: Dibromofluoromethane				1.0	110	77	126			
Surr: p-Bromofluorobenzene				1.0	105	76	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R225719	
Lab ID: B14061106-011D_MS	53	Sample Matrix Spike				Run: SUB-B225719			06/18/14 17:22	
Surr: Toluene-d8				1.0	105	79	122			
Lab ID: B14061106-011D_MS	53	Sample Matrix Spike Duplicate				Run: SUB-B225719			06/18/14 17:51	
trans-1,4-Dichloro-2-butene		2.77	ug/L	1.0	55	50	142	5.9	20	
Acetone		48.8	ug/L	20	98	62	130	12	20	
Acrylonitrile		52.0	ug/L	20	104	60	130	4.7	20	
Benzene		5.20	ug/L	1.0	104	71	133	0.8	20	
Bromochloromethane		5.76	ug/L	1.0	115	68	131	4.1	20	
Bromodichloromethane		5.32	ug/L	1.0	106	67	138	0.7	20	
Bromoform		5.68	ug/L	1.0	114	64	136	3.6	20	
Bromomethane		7.56	ug/L	1.0	151	60	138	13	20	S
Carbon disulfide		5.56	ug/L	1.0	111	46	145	2.2	20	
Carbon tetrachloride		6.32	ug/L	1.0	126	61	144	1.9	20	
Chlorobenzene		4.88	ug/L	1.0	98	78	136	2.4	20	
Chlorodibromomethane		5.28	ug/L	1.0	106	72	136	0.0	20	
Chloroethane		5.44	ug/L	1.0	109	64	136	0.7	20	
Chloroform		5.84	ug/L	1.0	117	69	133	0.0	20	
Chloromethane		5.24	ug/L	1.0	105	63	149	3.9	20	
1,2-Dibromo-3-chloropropane		5.00	ug/L	1.0	100	63	125	4.1	20	
1,2-Dibromoethane		4.96	ug/L	1.0	99	75	131	0.8	20	
Dibromomethane		5.24	ug/L	1.0	105	72	133	4.5	20	
1,2-Dichlorobenzene		4.88	ug/L	1.0	98	78	129	0.0	20	
1,4-Dichlorobenzene		5.36	ug/L	1.0	107	78	131	1.5	20	
Dichlorodifluoromethane		5.60	ug/L	1.0	112	55	141	2.8	20	
1,1-Dichloroethane		5.40	ug/L	1.0	108	72	130	2.9	20	
1,2-Dichloroethane		5.52	ug/L	1.0	110	57	146	1.5	20	
1,1-Dichloroethene		5.68	ug/L	1.0	114	66	142	0.7	20	
cis-1,2-Dichloroethene		5.32	ug/L	1.0	106	74	133	0.8	20	
trans-1,2-Dichloroethene		5.84	ug/L	1.0	117	76	138	2.1	20	
1,2-Dichloropropane		4.64	ug/L	1.0	93	72	135	2.6	20	
cis-1,3-Dichloropropene		4.48	ug/L	1.0	90	75	132	1.8	20	
trans-1,3-Dichloropropene		4.76	ug/L	1.0	95	77	145	0.8	20	
Ethylbenzene		5.44	ug/L	1.0	109	78	131	0.7	20	
2-Hexanone		50.8	ug/L	20	102	72	131	4.0	20	
Iodomethane		4.16	ug/L	1.0	83	66	132	16	20	
Methyl ethyl ketone		48.0	ug/L	20	96	55	145	3.4	20	
Methyl isobutyl ketone		52.8	ug/L	20	106	73	129	6.2	20	
Methylene chloride		4.92	ug/L	1.0	98	73	126	1.6	20	
Styrene		5.56	ug/L	1.0	111	76	134	2.2	20	
1,1,1,2-Tetrachloroethane		5.44	ug/L	1.0	109	75	135	0.0	20	
1,1,2,2-Tetrachloroethane		5.20	ug/L	1.0	104	72	132	3.1	20	
Tetrachloroethene		5.64	ug/L	1.0	113	78	137	2.1	20	
Toluene		5.28	ug/L	1.0	106	78	134	1.5	20	
1,1,1-Trichloroethane		6.04	ug/L	1.0	121	64	141	0.7	20	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/30/14
Work Order: H14060234

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: B_R225719	
Lab ID: B14061106-011D_MS	53	Sample Matrix Spike Duplicate				Run: SUB-B225719			06/18/14 17:51	
1,1,2-Trichloroethane		5.28	ug/L	1.0	106	72	133	2.3	20	
Trichloroethene		5.12	ug/L	1.0	102	75	138	0.0	20	
Trichlorofluoromethane		5.96	ug/L	1.0	119	58	139	0.7	20	
1,2,3-Trichloropropane		5.36	ug/L	1.0	107	67	133	0.7	20	
Vinyl acetate		4.68	ug/L	1.0	94	31	124	2.6	20	
Vinyl chloride		5.48	ug/L	1.0	110	66	140	1.5	20	
m+p-Xylenes		10.6	ug/L	1.0	106	78	133	1.5	20	
o-Xylene		5.24	ug/L	1.0	105	79	136	2.3	20	
Surr: 1,2-Dichloroethane-d4				1.0	109	70	130			
Surr: Dibromofluoromethane				1.0	113	77	126			
Surr: p-Bromofluorobenzene				1.0	104	76	127			
Surr: Toluene-d8				1.0	108	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

MT-DEQ Solid Waste Section

H14060234

Login completed by: Wanda Johnson

Date Received: 6/11/2014

Reviewed by: BL2000\sdull

Received by: abb

Reviewed Date: 6/16/2014

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	5.3°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Samples for Dissolved Metals were subsampled, filtered, and preserved to pH <2 with 2 mL of Nitric acid per 250 mL in the laboratory. According to 40CFR136, samples for Dissolved Metals should be filtered and preserved within 15 minutes of collection. Wj 6/11/14

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ	Mister M Landfill	State: MT	Yes ☑ No ☐
Report Mail Address (Required):	**Contact Name:** / **Phone/Fax:**	**Cell:**	**Sampler: (Please Print)**
1620 East Sixth Ave Helena, MT 59620	John Collins 444 2802		John Collins
☑ No Hard Copy Email: jcollins3@mt.gov	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
	SAA		14982

Invoice Address (Required): SAA

☑ No Hard Copy Email: _____

Special Report/Formats:

- ☐ DW
- ☐ POTW/WWTP
- ☑ State: _____
- ☐ Other: _____
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

ANALYSIS REQUESTED

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Inorganics (Cl, F, SO4, Nitrate)	Diss. metals	VOC's - EPA 8260	SEE ATTACHED
1	MW-12	6-10-14	1330	W	✓	✓	✓	
2	MW-11	6-10-14	1410	W	✓	✓	✓	
3	MW-9R	6-10-14	1445	W	✓	✓	✓	
4	MW-OW	6-10-14	1545	W	✓	✓	✓	
5	MW-1W	6-10-14	1615	W	✓	✓	✓	
6								
7								
8								
9								
10								

Standard Turnaround (TAT)

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Samples were not field filtered. Please filter the diss. metals samples – They are HNO_3 preserved.

Shipped by: Hand

Cooler ID(s):

Receipt Temp 5.3 °C

On Ice: (Y) N

Custody Seal On Bottle Y (N) On Cooler Y (N)

Intact Y N

Signature Match Y N

LABORATORY USE ONLY: H140602B4

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
John Collins	6/11/14 14:45				
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Amanda Bindbaum	Date/Time: 6/11/14 14:45	Signature: Amanda Bindbaum

Sample Disposal: Return to Client: _____ Lab Disposal: ✓

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

APPENDIX B: RESULTS OF STATISTICAL ANALYSES

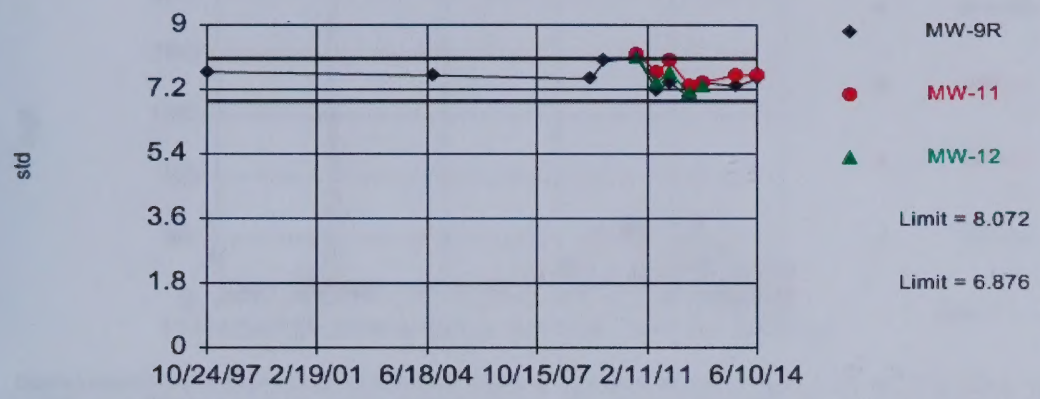
Figure F-1: Prediction Limit Analysis for pH

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA

Within Limits

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.474, Std. Dev.=0.2261, n=23. Insufficient data to test for seasonality; data will not be deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.965, critical = 0.914. Report alpha = 0.05. Individual comparison alpha = 0.008333. Most recent point for each compliance well compared to limit.

Constituent: pH Analysis Run 9/3/2014 11:02 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

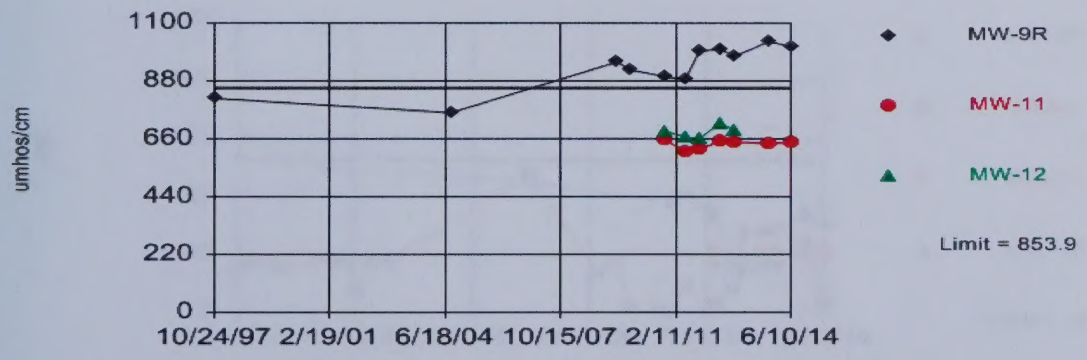
Figure F-2: Prediction Limit Analysis for Conductivity

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA

Exceeds Limit: MW-9R

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=763.3, Std. Dev.=39.03, n=23. Insufficient data to test for seasonality; data will not be deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9439, critical = 0.914. Report alpha = 0.05. Individual comparison alpha = 0.01667. Most recent point for each compliance well compared to limit.

Constituent: SC Analysis Run 9/3/2014 11:05 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

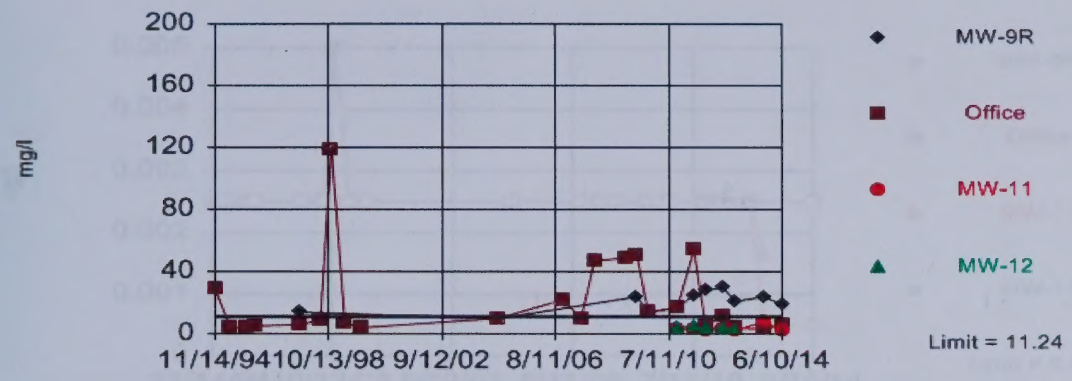
Figure F-3: Prediction Limit Analysis for Chloride

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA

Exceeds Limit: MW-9R

Prediction Limit

Interwell Parametric



Background Data Summary (based on square transformation): Mean=53.45, Std. Dev.=29.65, n=23. Insufficient data to test for seasonality; data will not be deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9151, critical = 0.914. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Constituent: Chloride Analysis Run 9/3/2014 11:06 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

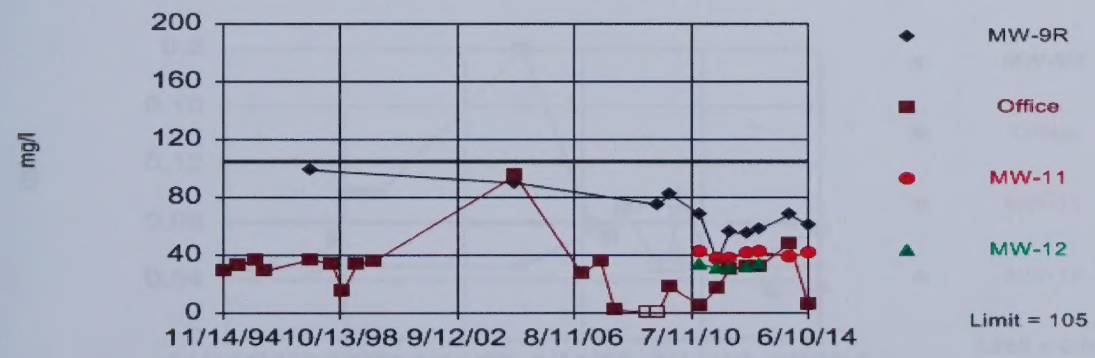
Figure F-4: Prediction Limit Analysis for Sulfate

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 23 background values. Report alpha = 0.1481. Individual comparison alpha = 0.03929. Most recent point for each compliance well compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Sulfate Analysis Run 9/3/2014 11:08 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

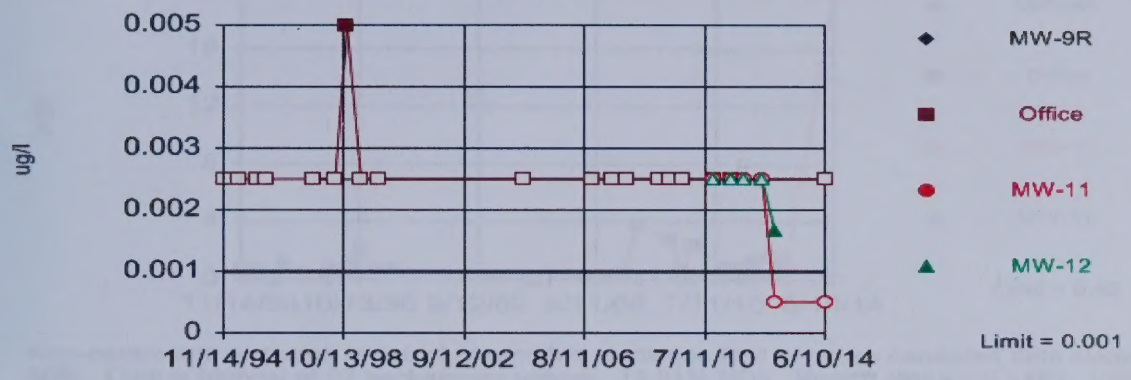
Figure F-5: Prediction Limit Analysis for Arsenic

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA
Hollow symbols indicate censored values.

Exceeds Limit: MW-12

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 23) were censored; limit is most recent reporting limit. Report alpha = 0.1481. Individual comparison alpha = 0.03929. Most recent point for each compliance well compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Arsenic Analysis Run 9/3/2014 11:09 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

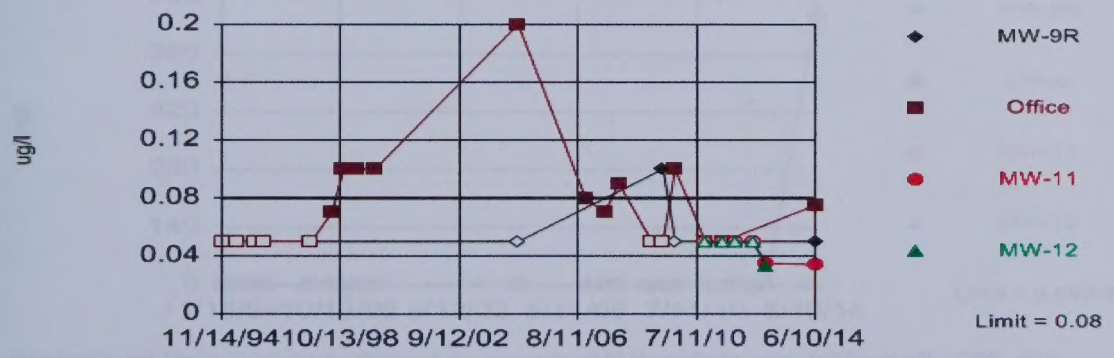
Figure F-6: Prediction Limit Analysis for Barium

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 23 background values. 69.57% NDs. Report alpha = 0.1481. Individual comparison alpha = 0.03929. Most recent point for each compliance well compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Barium Analysis Run 9/3/2014 11:11 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

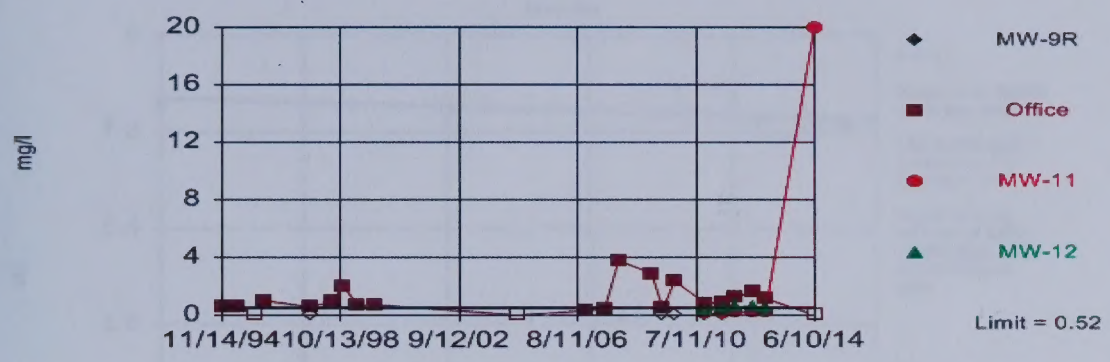
Figure F-7: Prediction Limit Analysis for Iron

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA
Hollow symbols indicate censored values.

Exceeds Limit: MW-11

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 23 background values. 73.91% NDs. Report alpha = 0.1481. Individual comparison alpha = 0.03929. Most recent point for each compliance well compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Iron Analysis Run 9/3/2014 11:12 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

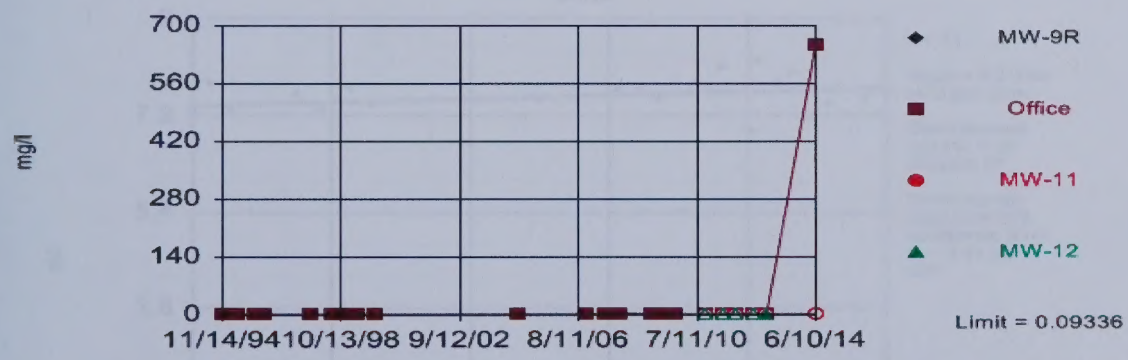
Figure F-8: Prediction Limit Analysis for Zinc

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA
Hollow symbols indicate censored values.

Exceeds Limit: Office

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.1739, Std. Dev.=0.05356, n=23, 4.348% NDs. Insufficient data to test for seasonality; data will not be deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9592, critical = 0.914. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Constituent: Zinc Analysis Run 9/3/2014 11:13 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-9: Trend Analysis for pH in MW-9R

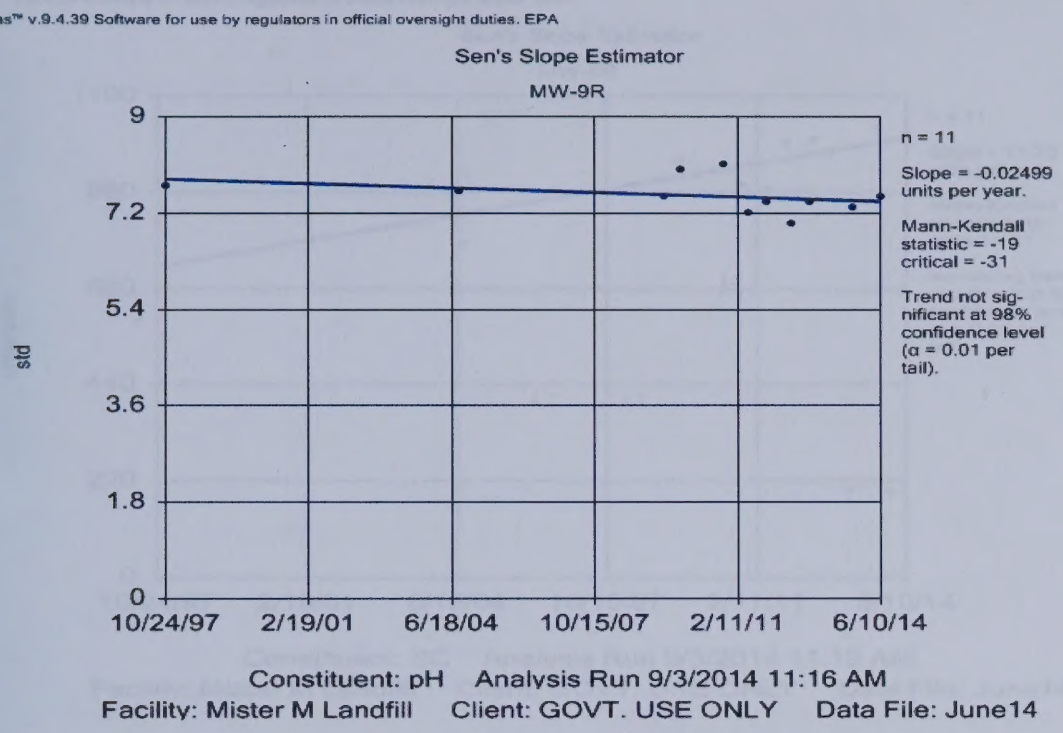


Figure F-10: Trend Analysis for pH in MW-OW

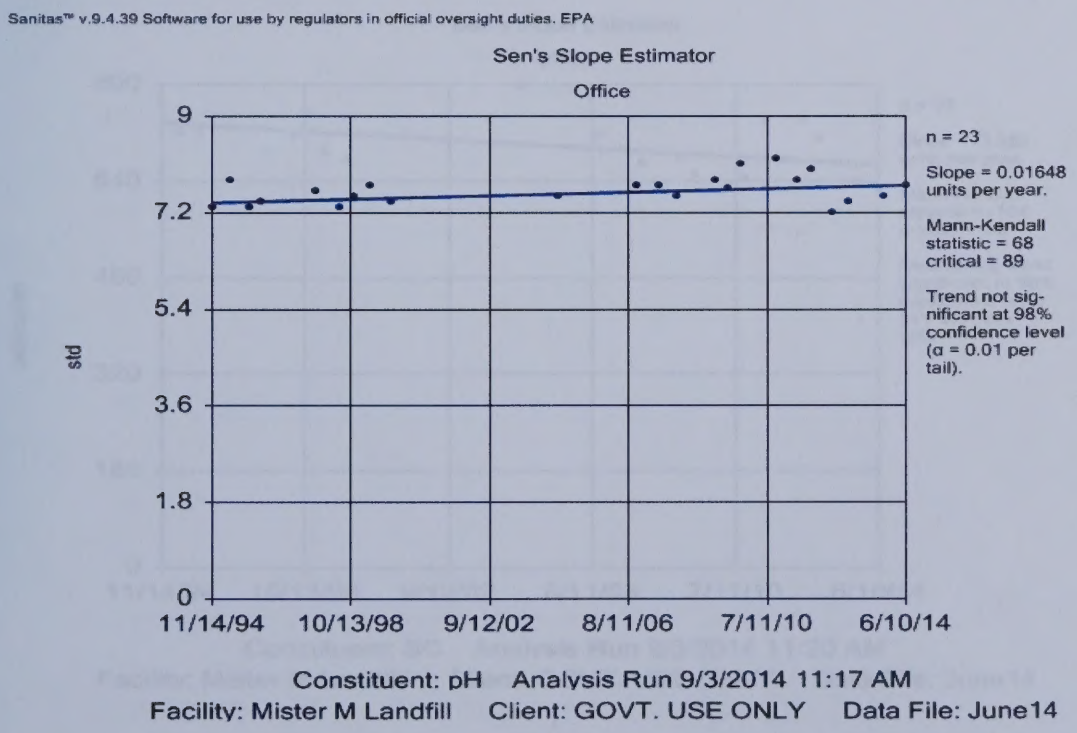
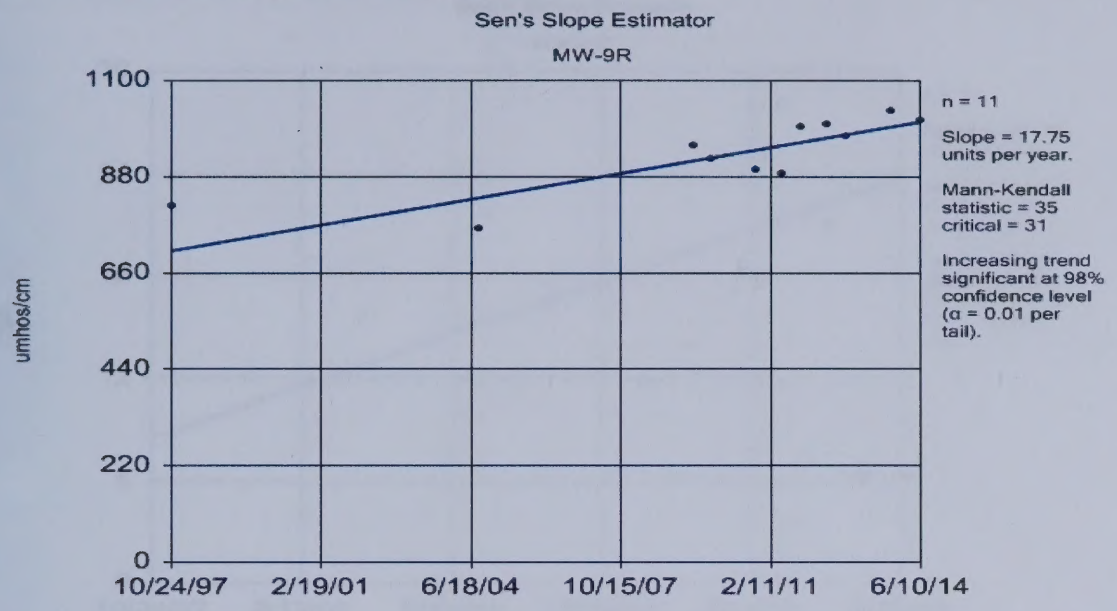


Figure F-11: Trend Analysis for Specific Conductance in MW-9R

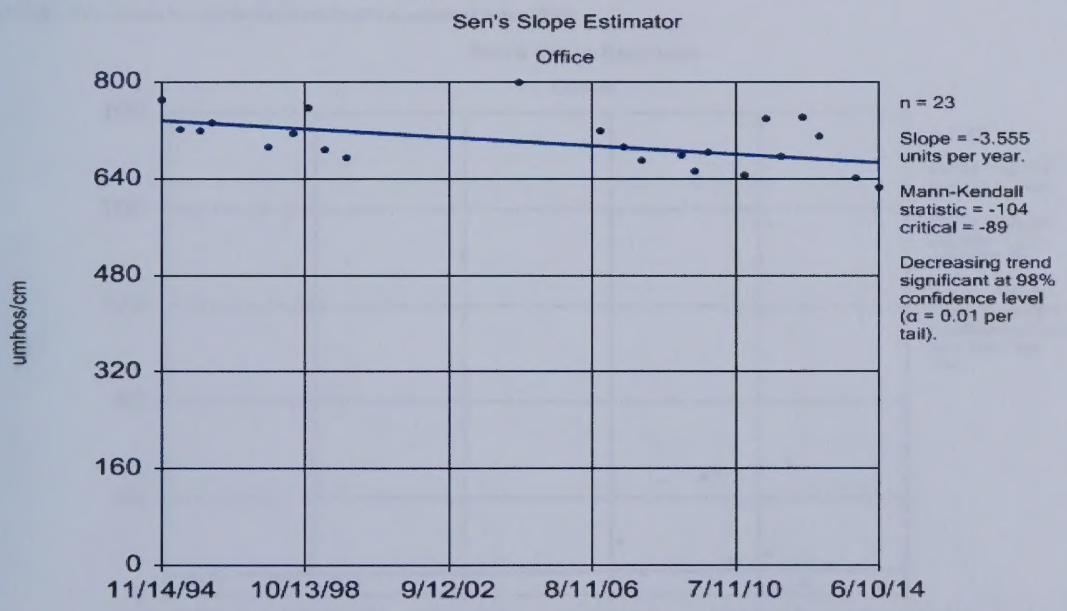
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA



Constituent: SC Analysis Run 9/3/2014 11:19 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-12: Trend Analysis for Specific Conductance in MW-OW

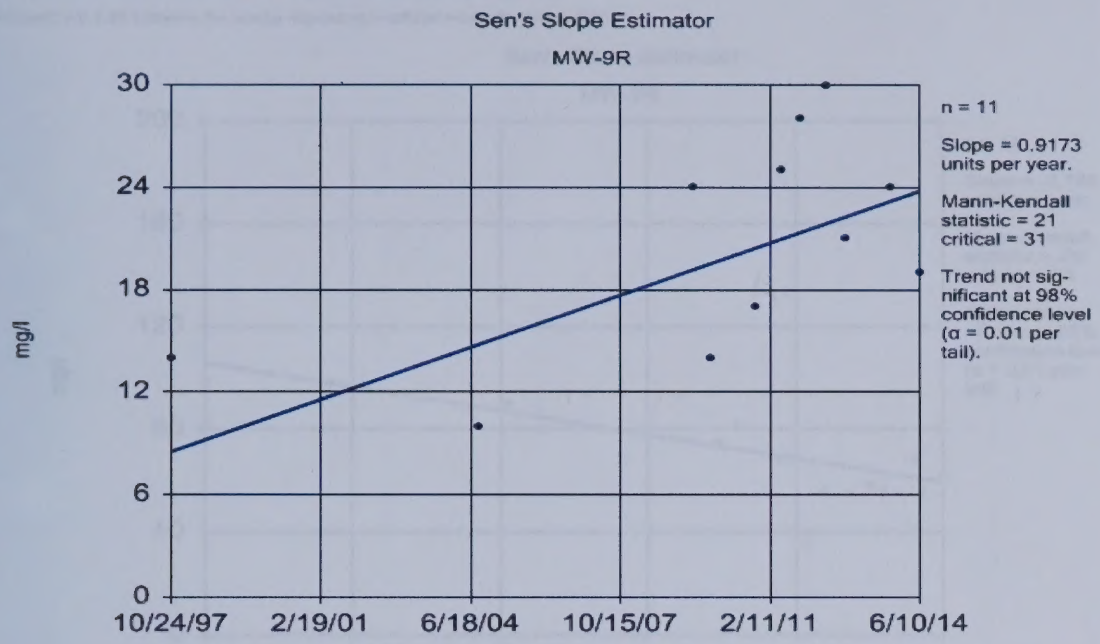
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA



Constituent: SC Analysis Run 9/3/2014 11:20 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-13: Trend Analysis for Chloride in MW-9R

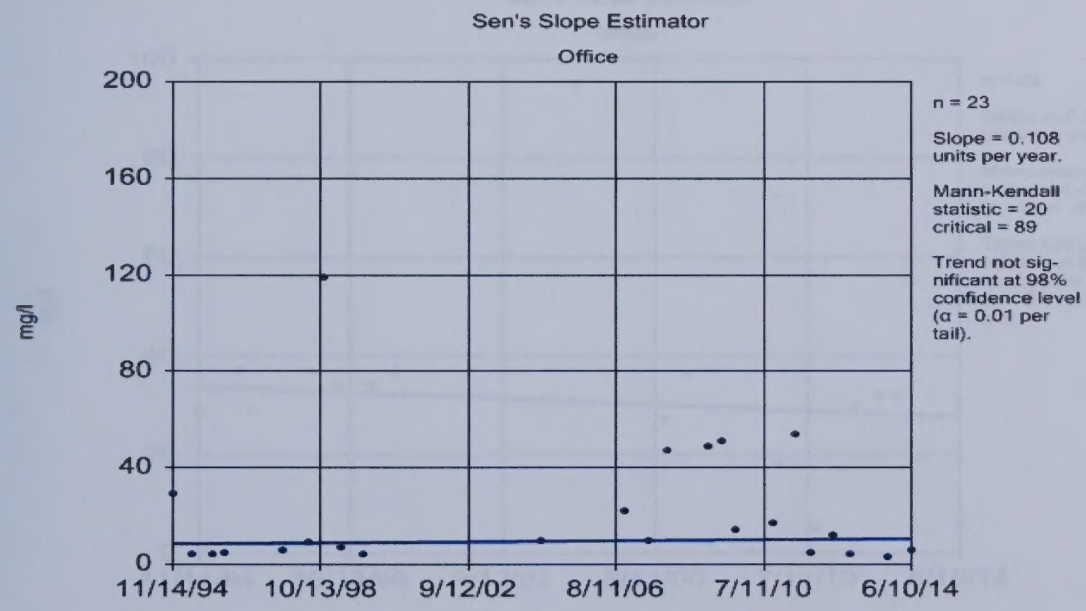
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA



Constituent: Chloride Analysis Run 9/3/2014 11:21 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-14: Trend Analysis for Chloride in MW-OW

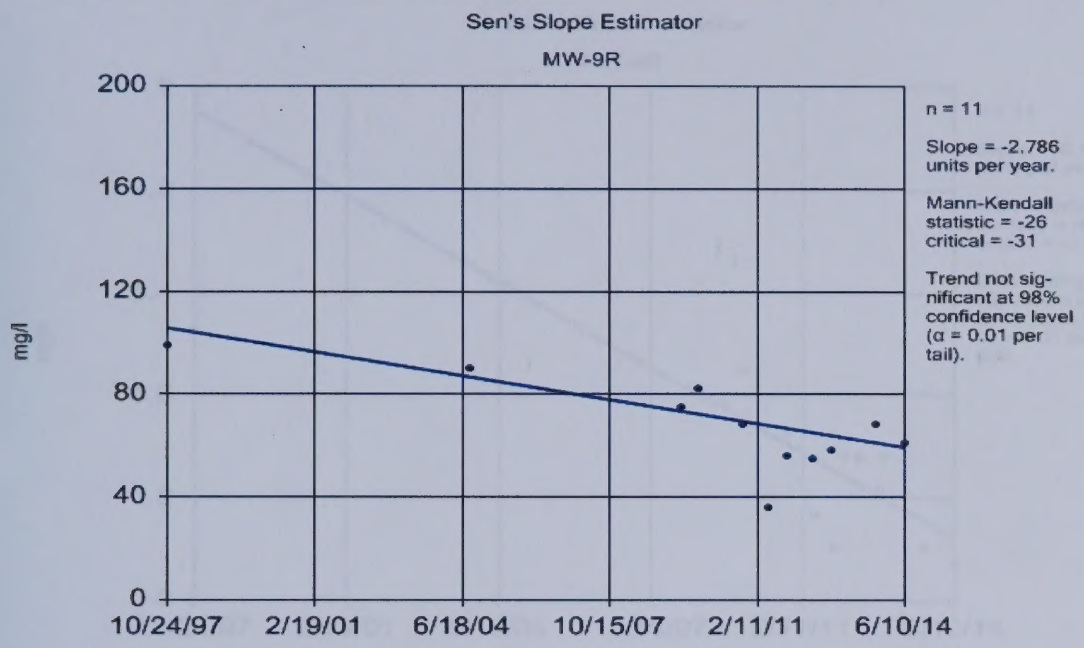
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA



Constituent: Chloride Analysis Run 9/3/2014 11:22 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-15: Trend Analysis for Sulfate in MW-9R

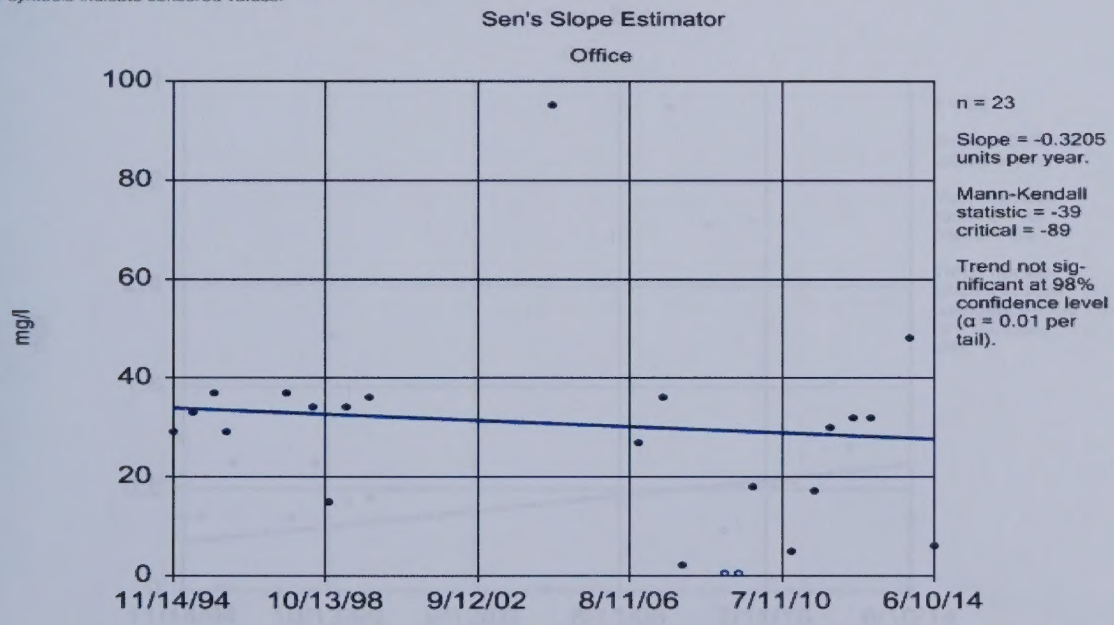
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA



Constituent: Sulfate Analysis Run 9/3/2014 11:24 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-16: Trend Analysis for Sulfate in MW-OW

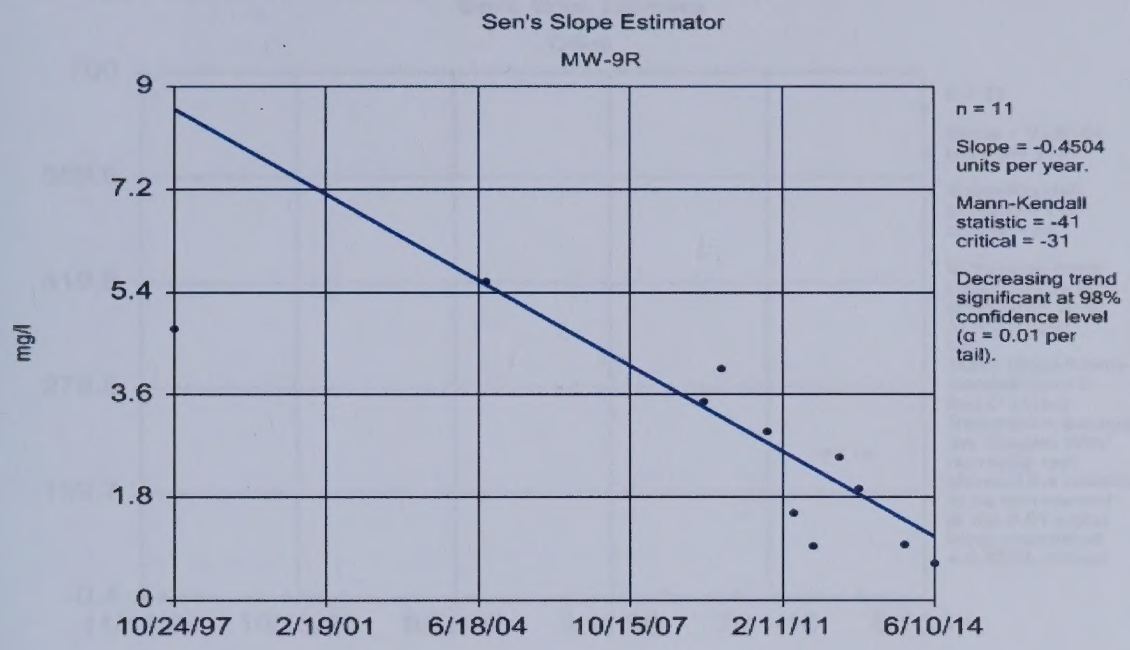
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA
Hollow symbols indicate censored values.



Constituent: Sulfate Analysis Run 9/3/2014 11:25 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-17: Trend Analysis for Nitrate + Nitrite in MW-9R

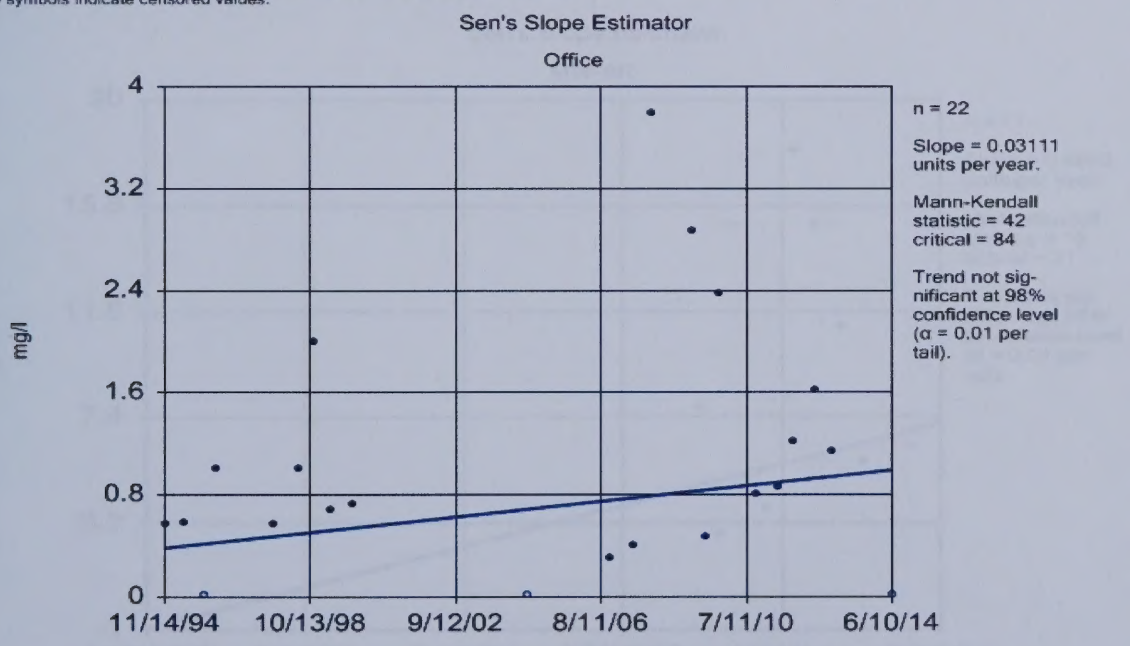
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA



Constituent: Nitrate+Nitrite Analysis Run 9/3/2014 11:26 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-18: Trend Analysis for Iron in MW-OW

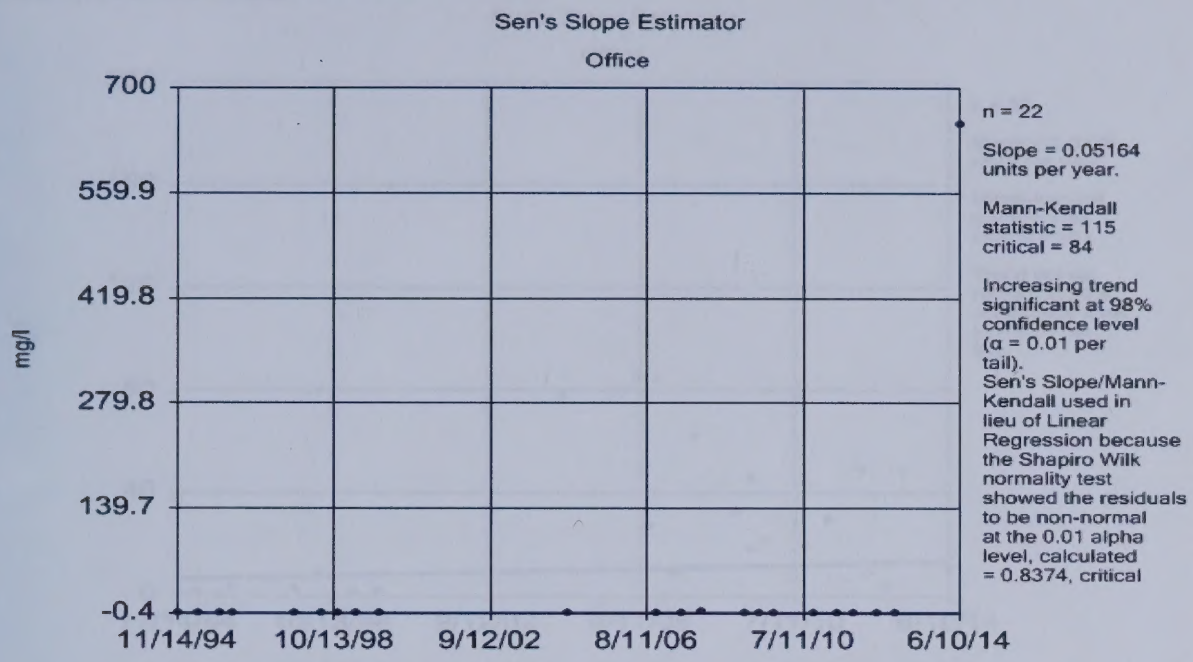
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA
Hollow symbols indicate censored values.



Constituent: Iron Analysis Run 9/3/2014 11:32 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-19: Trend Analysis for Zinc in MW-OW

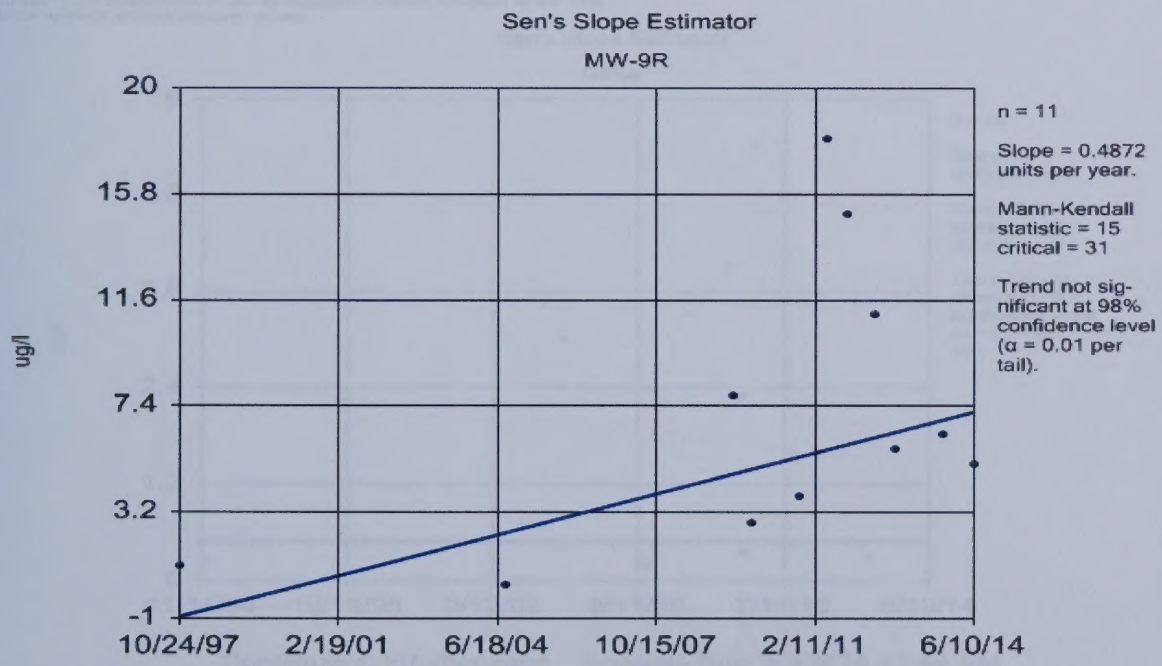
Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA



Constituent: Zinc Analysis Run 9/3/2014 11:38 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-20: Trend Analysis for cis-1,2-Dichloroethene in MW-9R

Sanitas™ v.9.4.39 Software for use by regulators in official oversight duties. EPA



Constituent: cis-1,2-Dichloroethene Analysis Run 9/3/2014 11:39 AM
Facility: Mister M Landfill Client: GOVT. USE ONLY Data File: June14

Figure F-21: Trend Analysis for cis-1,2-Dichloroethene in MW-OW

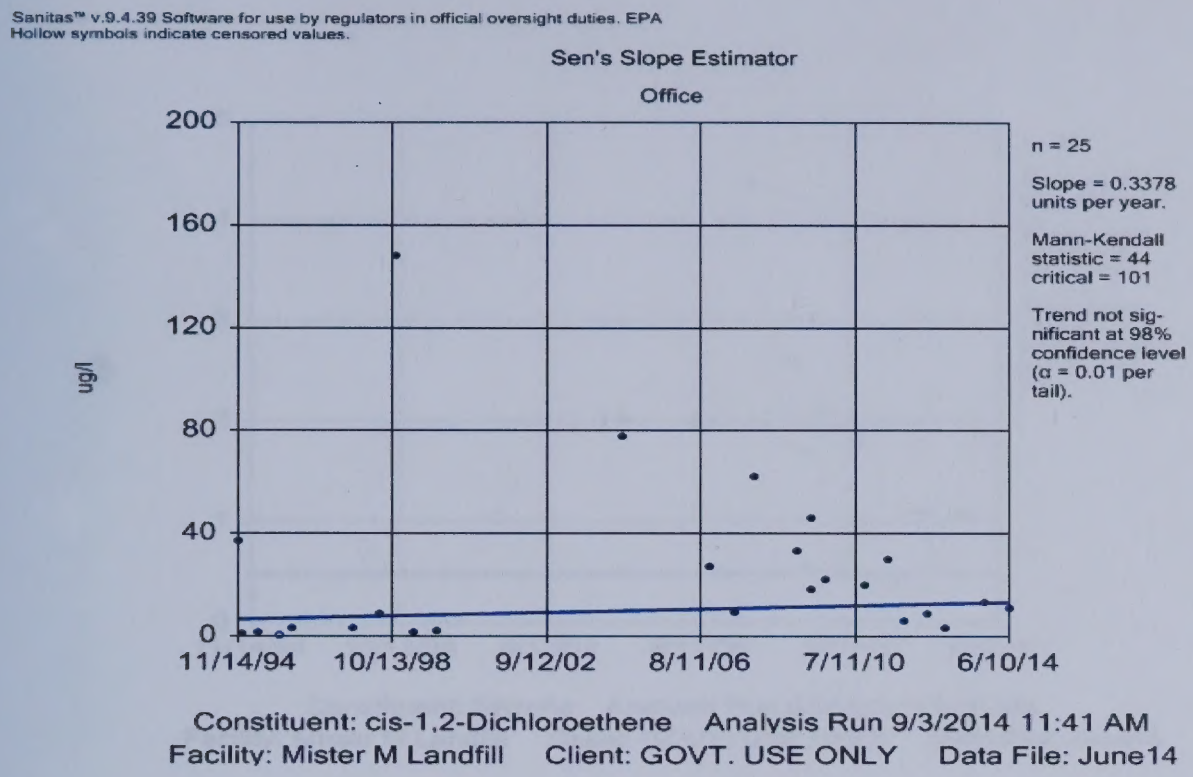


Figure F-22: Trend Analysis for Ethyl benzene in MW-OW

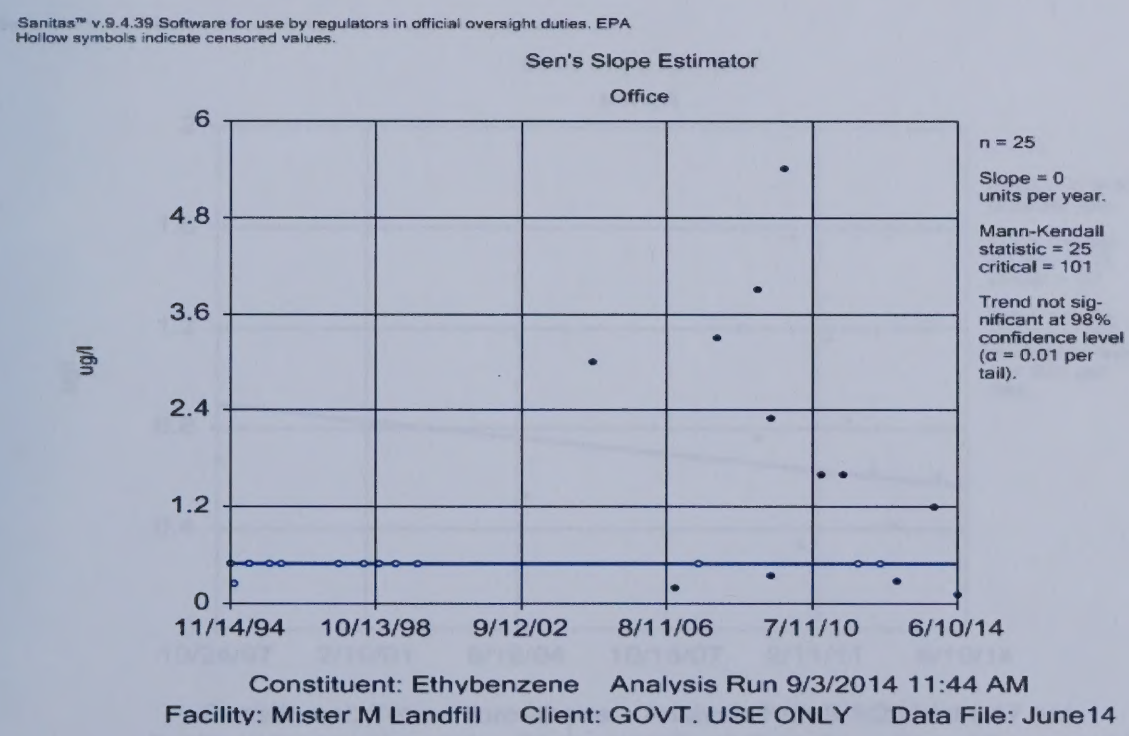


Figure F-23: Trend Analysis for Styrene MW-OW

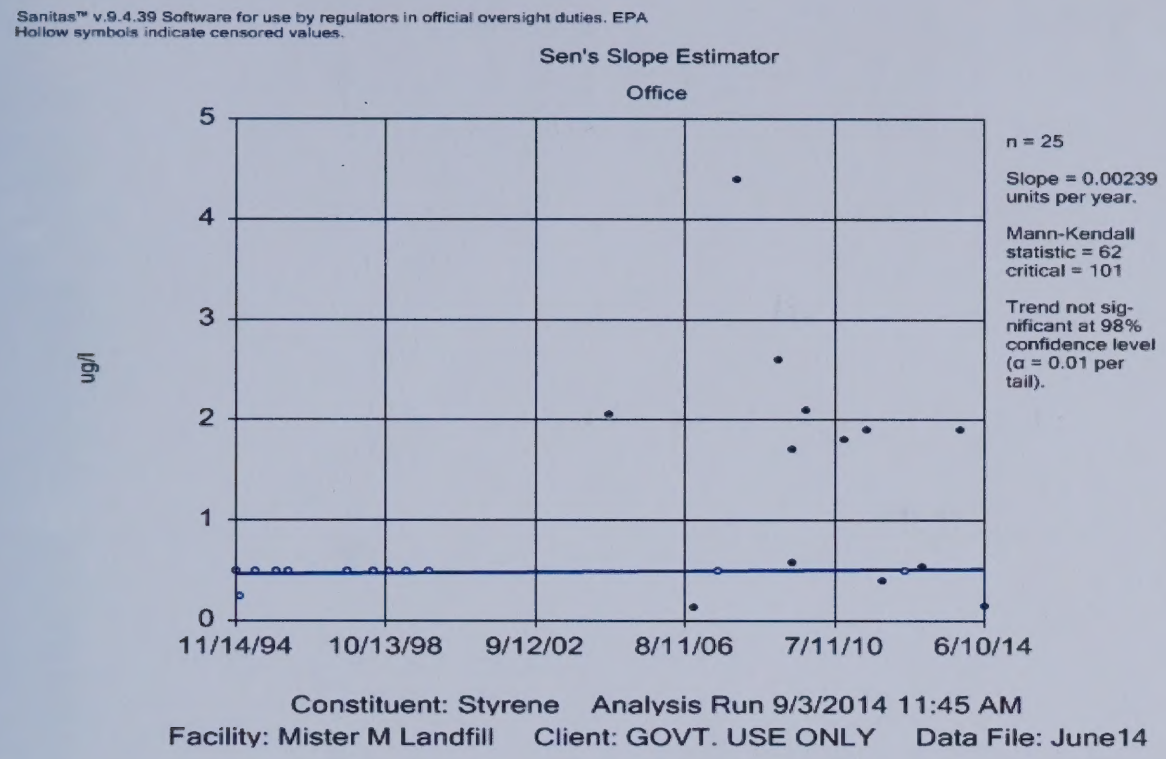
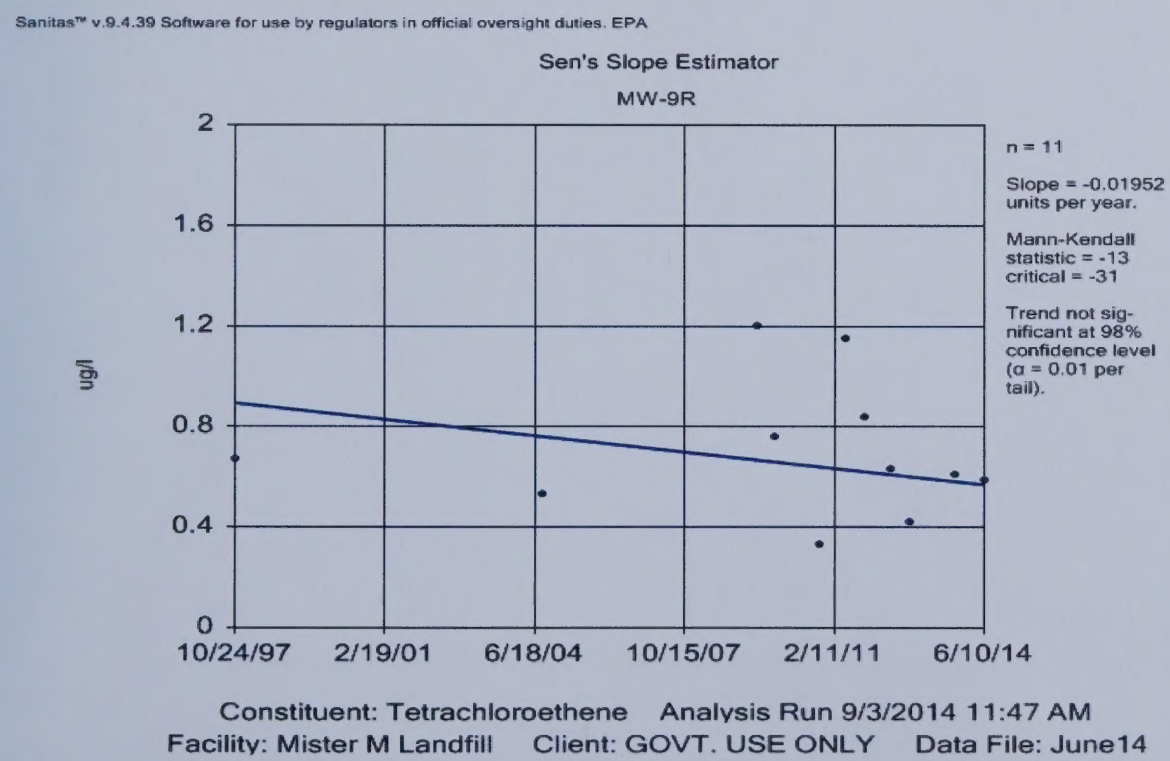


Figure F-24: Trend Analysis for Tetrachloroethene in MW-9R



APPENDIX C: HISTORICAL CONCENTRATIONS PLOTS

Figure E-5: Nitrate + Nitrite

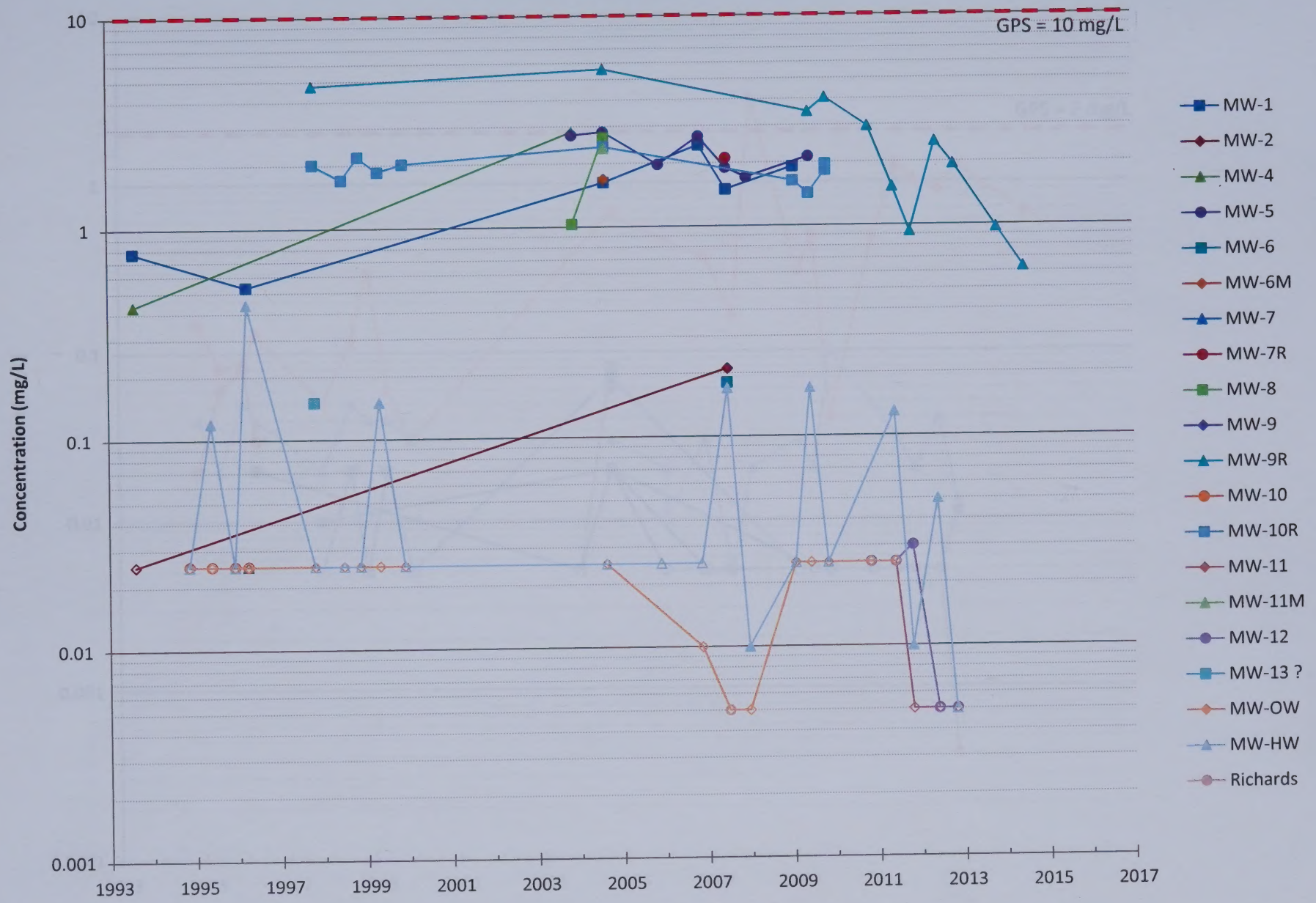


Figure E-9: Zinc

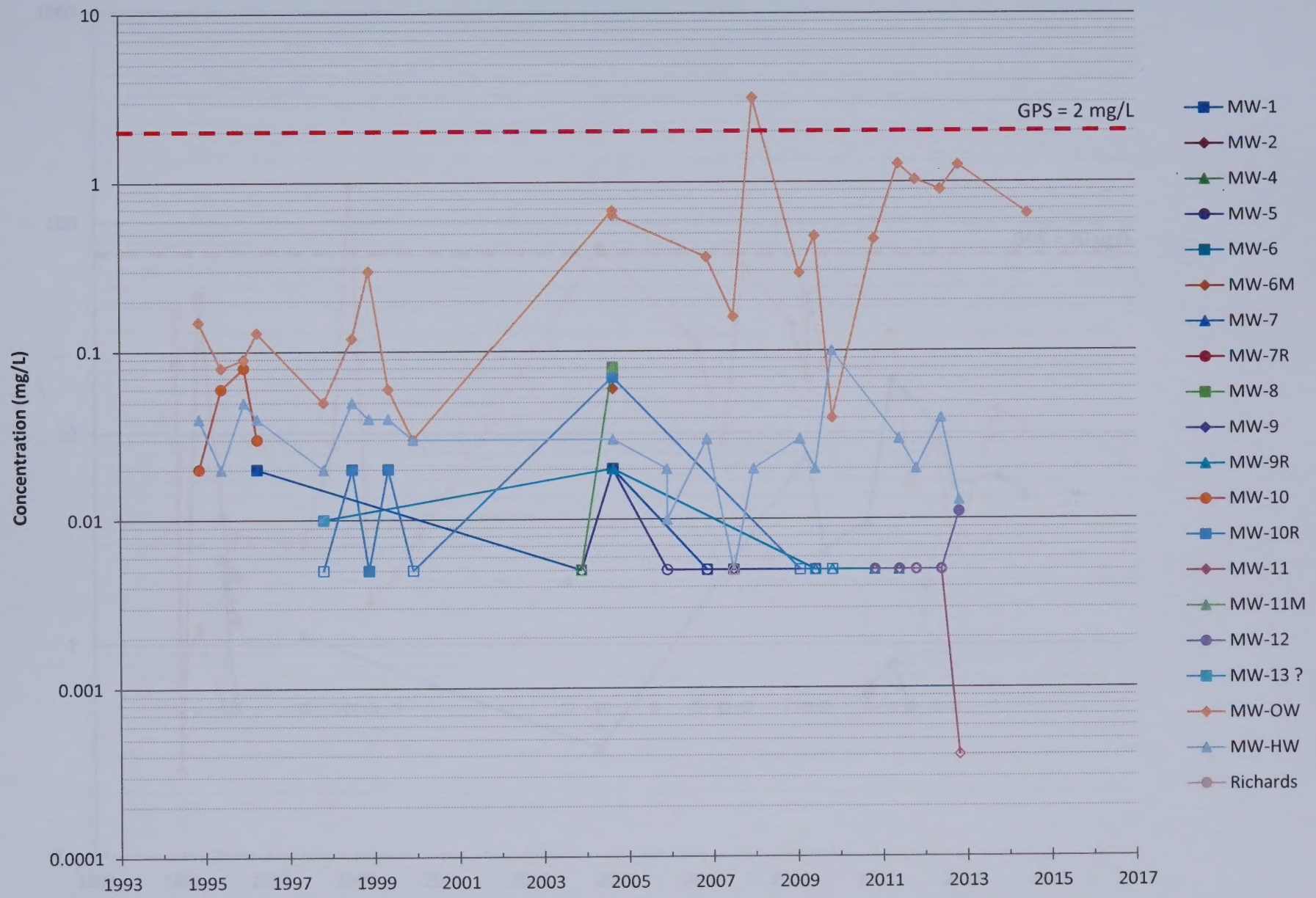


Figure E-10: cis-1,2-Dichloroethene

Figure E-13: Tetrachloroethene

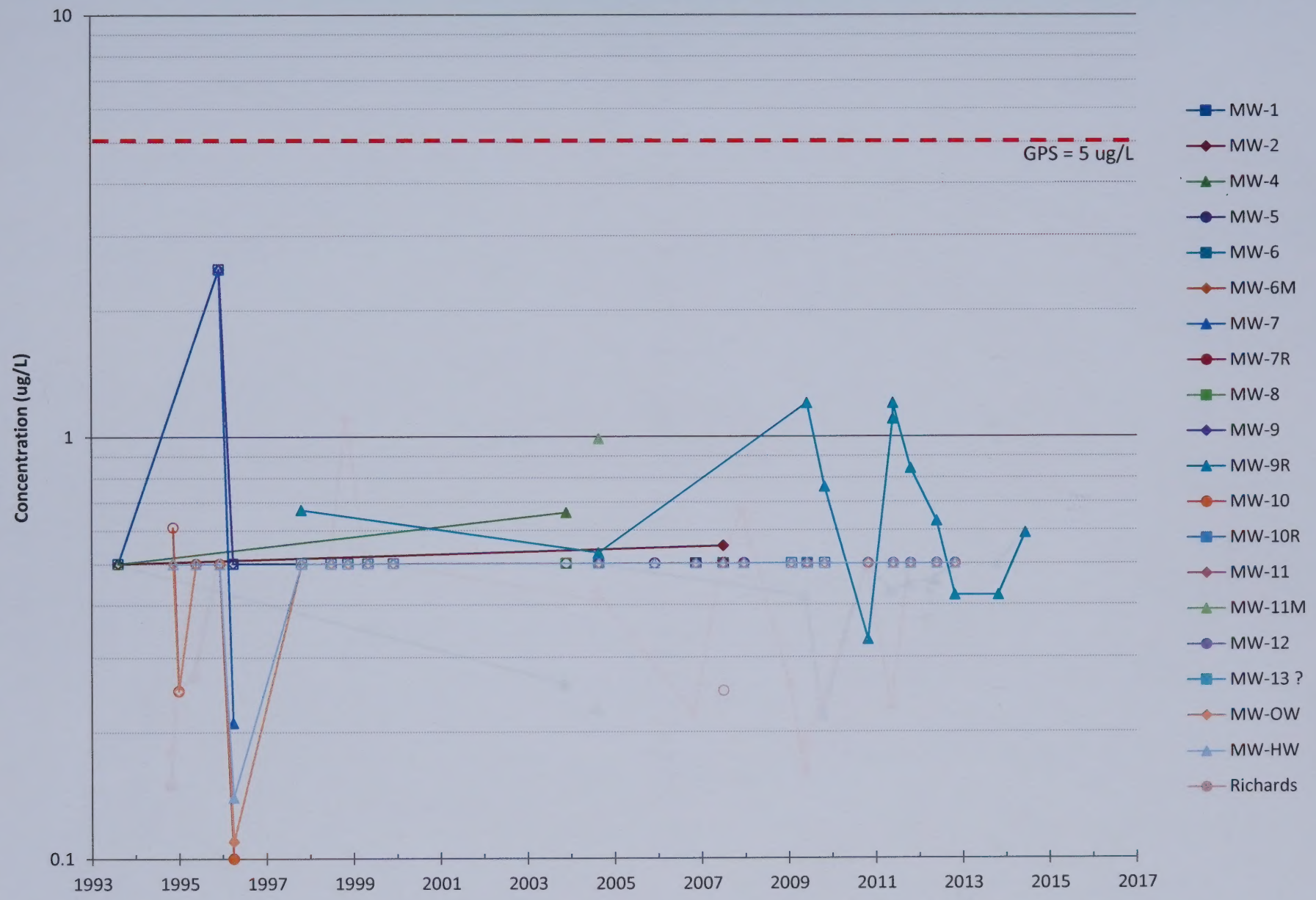


Figure E-X: Trichloroethene

APPENDIX D: HISTORICAL WATER LEVEL PLOTS

Figure B-1: Static Water Levels in Shallow Wells

The reference elevations for MW-7R, MW-9R, and MW-10R are estimated from topographic contours and field observations.

Figure B-2: Static Water Levels in Deep Wells

The reference elevations for MW-11, MW-12, and MW-OW are estimated from topographic contours and field observations.


Figure E-2: Static Water Levels in Deep Wells
Static water level (feet above mean sea level)
4180
4178
4176
4174
4172
4170
4168
4166
4164
4162
4160
2007
2008
2009
2010
2011
2012
2013
2014
2015
Date
MW-11
MW-12
MW-OW
The reference elevations for MW-11, MW-12, and MW-OW are estimated from topographic contours and field observations.

Correspondence Slip

Date Requested: 9-5-14

Originator: JL

Date Needed By: 9-21-14

REVIEW ROUTING

Name	Task	Initial/Date
Admin	Proof	JL / 9-5
MLH		MLH 12-8-14
RT		RT / 9-10-14
		/

Mail original via:
✓ Regular ○ Certified ○ Registered ○ FedEx

Fax to addressee at:

Proof Path: G:\WUT\

Special Instructions:

Mail copy of enclosures to CC's? Y N

Copies of enclosures for file needed? Y N

Copy of letter for file needed? Y N

Email copies sent? Y N

EMAIL copy sent to Project Originator? Y N

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Groundwater monitoring at the closed Mister M Landfill, License #302, was conducted in October 2013 by the Montana Department of Environmental Quality (MDEQ), Solid Waste Section, according to the July 2011 Sampling and Analysis Plan for Groundwater (SAP) (MDEQ, 2011 [2]). The Mister M Landfill is located in Fergus County, Montana, approximately four miles east of Lewistown on US Highway 87, as shown in Figure 1. As shown in Figure 2, the landfill lies in a small south facing coulee which drains to Boyd Creek. The facility received Class II wastes from 1956 to 1998, and was granted interim closure status on December 5, 2000. The current owners, Marvin and Sandra Mintyala, operated the facility from 1974 until approximately 2000, when the site was abandoned.

According to the Geohydrologic Characterization (Gillespie, 1993 revised; and Gillespie, 1994) the landfill is underlain by the Kootenai formation, which consists of predominately shale with some silty sandstone. A basal unit of sandstone in the Kootenai formation is the uppermost aquifer in the area. Minor amounts of water have been encountered in the upper portions of the Kootenai formation but most of the monitoring wells completed in the upper Kootenai formation at the site have frequently been dry or contained minimal volumes of water.

Previous groundwater sampling at the facility was conducted by the owners or their consultants from 1993-1999 (Gillespie, 1995 and 1996; Energy Laboratories, 1997, 1998 [1], and 1998 [2]; and Portage Environmental, 1999 and 2000). From 2003-2007 Tetra Tech, Inc was authorized by the MDEQ to conduct groundwater monitoring in the absence of action by the owners (Energy Laboratories, 2003, 2004, 2005, 2006, and 2007; Maxim, 2005; Tetra Tech, 2006 and 2008). MDEQ Solid Waste Section personnel have conducted groundwater monitoring from January 2009 to the present (MDEQ, 2009 [1]; 2009 [2]; 2010 [1]; 2010 [2], 2011 [1], 2011[3], 2012).

2.0 Field Procedures

MDEQ Solid Waste Section personnel conducted monitoring activities on October 23 and 24, 2013, including monitoring well inspections, static water level (SWL) measurements, and groundwater sample collection as part of the detection monitoring program currently in effect for the facility. The locations of the monitoring points and the activities that were performed at each point are shown in Figure 3. Copies of the field notes are in the Solid Waste Section files. All field activities described in this report were conducted in accordance with the approved July 2011 SAP, and any deviations from the SAP are described herein. The analysis of groundwater samples was conducted by Energy Laboratories Inc, in Helena, Montana.

2.1 Well Inspections

The monitoring wells currently in use were inspected on October 23, 2013. MW-OW does not have an external casing and the new locking cap installed in April 2009 is already showing significant weather wear. All other monitoring wells are in good condition.

2.2 Water Level Measurements

Static water levels were measured on October 23, 2013, in wells MW-5, MW-9R, MW-11, MW-12, and MW-OW using a Slope Indicator electric water level meter. The total depths of wells MW-9R, MW-11, and MW-12 were also recorded.

2.3 Groundwater Sampling

Groundwater samples were collected October 23 and 24, 2013, from wells MW-9R, MW-11, MW-12, MW-HW, and MW-OW. A field duplicate was collected from well MW-12. At each well that was sampled, samples were collected for all of the parameters listed in the SAP.

The wells were purged and sampled following the procedures in the SAP with the deviations described below. All of the wells were purged and sampled using disposable bailers. Field water

quality measurements were made using a rented In-Situ SmartTroll model R99170 water quality meter, which was calibrated by Solid Waste Section personnel.

After collection, the samples were labeled as described in the SAP and were stored on ice in a laboratory supplied cooler. The samples were stored according to chain-of-custody requirements and hand delivered to Energy Laboratories Inc in Helena, Montana on October 25, 2013.

3.0 Monitoring Results

3.1 Groundwater Levels and Flow

The water levels in October 2013 ranged from 2.63 to 8.03 feet lower than the May 2012 measurements, and 1.19 feet lower to 5.15 feet lower than the October 2011 measurements. All of the monitoring wells at the site have shown a consistent trend of higher water levels in the spring and lower in the fall, due to seasonal precipitation and snowmelt, except for well MW-11 where the water level rose for the first four measurements since installation of the well in October 2010, then fell for the first time from May to October 2012. The reason for this difference in MW-11 is unknown, but continued monitoring will show if MW-11 will now follow the same water level pattern seen in other site wells. The October 2013 water levels were on average lower than October 2012 levels due to lower precipitation this year. Figure 4 displays the October 2013 static water levels on a map. No attempt was made to contour the static water levels as the shallow wells are completed in minor water bearing zones of unknown horizontal extent and connectivity, and the water level measurements made in the deep water bearing zone are from wells that have not yet been surveyed. Groundwater flow in the shallow water bearing zones likely follows local topography and flows in a south to southwest direction. Groundwater flow in the deep water bearing zone is assumed to be to the southwest based on records from domestic wells in the area. Tables containing historic water levels and hydrographs for both the shallow and deep water bearing zones are included in Appendix B.

3.2 Data Validation

Upon receipt from the laboratory, the analytical results were validated as described in the SAP to ensure that the data quality objectives had been met. The samples were received by the laboratory at a temperature of 2.7°C. The pH of all samples was within acceptable limits. All samples were analyzed within the required holding times. The relative percent difference for all field and laboratory duplicates were within control limits. All laboratory control samples and blanks were acceptable. Bromomethane and Methyl ethyl ketone were not detected in any samples and no results are flagged. No VOCs were detected in the Trip Blank. A copy of the laboratory QA/QC report is included in Appendix C.

3.3 Groundwater Analytical Results

The following sections discuss the analytical results grouped by analyte type. A copy of the laboratory analytical report is included in Appendix D. Historical concentration plots for all parameters detected during this sampling event and a table containing historical analytical results is included in Appendix E.

3.3.1 Indicator Parameters

Groundwater at the facility has a neutral to slightly alkaline pH, with values from 7.3 to 7.6 reported for this event. Specific conductance ranged from 642 μmhos/cm in the sample from MW-11, to 1030 μmhos/cm in MW-9R. For all wells except MW-9R and MW-OW the concentrations of Chloride and Sulfate remained near typical values, with Chloride ranging from 3 to 24 mg/l, and Sulfate ranging from 37 to 68 mg/l. The concentrations of Chloride decreased in MW-9R and MW-OW, but remained within the typical range for those wells. Nitrate + Nitrite was not detected in MW-11, MW-12, and MW-HW. Nitrate + Nitrite was detected at a concentration of 0.97 mg/l in MW-9R, well below the maximum contaminant level (MCL) of 10 mg/L and in the range of previous values at MW-9R. This concentration is also similar those observed in the shallow background well MW-5 in previous sampling events and in other shallow wells.

3.3.2 Dissolved Metals

Four metals were detected in facility wells during this sampling event. The detections of metals increased in frequency due to lower reporting limits for this sampling event. Dissolved metals were only collected in the House well this event due to not having the proper filtration apparatus.

3.3.3 Volatile Organic Compounds

Three VOCs were detected in MW-OW during this sampling event, compared with two in May 2012. All three compounds (concentrations in μg/L): cis-1,2-Dichloroethene (13), Ethyl benzene (1.2), Styrene (1.9) and vinyl chloride (0.42, with the exception of vinyl chloride the aforementioned VOC's have been routinely detected in MW-OW. The concentration of cis-1,2-dichloroethene has decreased significantly and the overall trend is only slightly increasing as shown by the October concentration of 13 ug/l. Ethyl benzene and Styrene were not detected during the May 2012 sampling event, and the current concentrations are below concentrations routinely detected from 2004 to 2011. Two VOCs were detected in MW-9R: Tetrachloroethene (0.61) and cis-1,2-Dichloroethene (0.22 J). Both of these compounds have been detected routinely in MW-9R and the concentrations were lower than those measured during the previous two years. Two VOCs were detected in MW-HW. Chloroform at 0.62 ug/l and Tetrachloroethene at 0.58 ug/l. VOC's have not been typically detected in MW-11 and MW-HW, however cis-1,2-Dichloroethene had been detected at very low concentrations in MW-12 during the October 2010,May 2011 and this sampling event.

4.0 Statistical Analysis

4.1 Statistical Methods

The statistical analyses were performed using the statistical software package Sanitas v.9.0.34. The validated analytical data was first screened to determine which parameters required statistical analysis. Only parameters which were detected in one or more compliance wells (MW-11 and MW-12) and had been historically detected at least once in the background well (MW-HW) were analyzed using an inter-well prediction limit. If a parameter was detected in a compliance well, but was always non-detected in the background dataset, the background value was set as the detection limit and any detection of that parameter above the detection limit was considered a statistical exceedance of background. As a result of the screening described above, the parameters selected for prediction limit analysis were: pH, SC, Chloride, Sulfate, Arsenic, Barium, Iron, and Zinc.

The background dataset was screened to determine if trends were present using the Sen's Slope/Mann Kendall test. Analysis of the data for Sulfate in MW-HW indicated a statistically significant decreasing trend, thus the background dataset was reduced to include only non-trending data and the data from 6/10/1980 to 11/14/1994 were excluded.

Each selected parameter was compared to the background dataset using an inter-well prediction limit analysis. The Sanitas software determines the distribution of the background dataset and performs the appropriate statistical test for that distribution. If the prediction limit analysis indicated an exceedance of background levels, a Sen's Slope/Mann Kendall test was conducted to analyze any trends in the data. All of the statistical tests were performed at a 95% site-wide confidence level, or the maximum confidence level that was possible given the size of the background dataset if a 95% confidence level was not possible.

A Sen's Slope/Mann Kendall test was also conducted on all parameters detected in the interior monitoring wells (MW-9R and MW-OW) to analyze any trends in the data.

4.2 Analysis Results

Table 1 contains a summary of the results of the statistical analyses. The full results of the statistical analyses are included in Appendix F. Due to the small size of the background dataset the site-wide confidence levels for non-parametric tests were less than 95%.

The values from the current sampling event for all parameters in compliance wells MW-11 and MW-12 were within prediction limits.

Trend analyses for well MW-9R indicated significant decreasing trends for Sulfate and Nitrate + Nitrite. The cause of these trends is unknown, but MW-9R is completed in a shallow aquifer which produces very little water, thus changes in groundwater chemistry are not unexpected. A significant increasing trend was also noted for Zinc in MW-OW. Metals contamination in MW-OW is thought to be a result of previous use of the well as a water supply well, and the increase in Zinc may be due to the galvanized casing and continued corrosion of metal components which may remain in the well.

5.0 Conclusions and Recommendations

Groundwater monitoring was conducted by the MDEQ at the Mister M Landfill on October 23 and 24, 2013. Water levels were measured in five wells, and groundwater samples were collected from five wells. All currently used wells were inspected.

The static water levels measured during the October 2013 event decreased on average from the May 2012 event and from the October 2011 event. The seasonal variations in water level noted in the facility wells are evidence that a relatively direct connection may exist between the surface and groundwater. Water levels will continue to be monitored semi-annually in the future to provide additional data on water level trends.

Additional data from the background well, MW-HW, is useful for evaluating the results from the other deep wells and increasing the power of the statistical tests. In particular, additional data is needed from this well on background levels of metals concentrations below the previous reporting limits. MW-HW will continue to be sampled on a semi-annual basis to increase the size of the background dataset for the compliance wells. Two VOCs were detected in MW-9R at much lower levels than the May 2012 sampling event and there appears to be an overall downward trend. The contaminants present in MW-9R are different than those seen in MW-OW indicating that the contamination may be from a different source or MW-9R may be closer to the source area than MW-OW; however the precise source of these VOCs is unknown. Additional data is needed to evaluate the contamination in that well. Well MW-9R will continue to be sampled in future events for Inorganics and VOCs. Well MW-OW continues to show both inorganic and organic contamination. Sulfate and Chloride have returned to near normal levels, while Zinc and Iron concentrations remain above normal levels. These metals are possibly the result of the galvanized well casing and or previous down-hole equipment associated with the use of MW-OW as a water supply well and not due to landfill leachate. VOCs continue to be detected in MW-OW at generally low levels, but the number of VOCs detected and the concentrations measured during the October 2013 sampling event continue to show an overall decreasing trend. MW-OW will continue to be sampled to track concentration trends.

The analytical results and statistical analyses from compliance wells MW-11 and MW-12 show no impacts from landfill leachate. The one VOC, cis-1,2-Dichloroethene, which was previously detected at a very low level in MW-12 was not detected during the past three sampling events. And during the October 2013 sampling event was detected at 0.22 ug/l as an estimated value. All parameters in the compliance wells are below background levels thus the facility remains in detection monitoring. MW-11 and MW-12 will continue to be sampled semi-annually as the point of compliance wells for the facility. The next groundwater sampling event is tentatively scheduled for May 2014.

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Table 1: Summary of Results of Statistical Analyses

		Prediction Interval Analysis					Trend Analysis	
Parameter	Well	Distribution	Confidence Level (%)	Prediction Limit(s)	Result	Exceeds Limit?	Slope (per yr)	Significant ?
pH	MW-9R	N/A	98	N/A	7.3	N/A	-0.03	No
	MW-11	normal	96.54	6.8-8.0	7.4	No	N/A	N/A
	MW-12	normal	96.54	6.8-8.0	7.3	No	N/A	N/A
	MW-OW	N/A	98	N/A	7.5	N/A	+0.01	No
SC	MW-9R	N/A	N/A	N/A	1030	N/A	+56	No
	MW-11	normal	96.16	865.9	642	No	-7	N/A
	MW-12	normal	96.16	865.9	686	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	641	N/A	-68	No
Chloride	MW-9R	N/A	N/A	N/A	24	N/A	+3	No
	MW-11	normal	97.5	10.0	8	No	N/A	N/A
	MW-12	normal	97.5	10.0	4	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	3	N/A	-1.0	No
Sulfate	MW-9R	N/A	N/A	N/A	68	N/A	-3.07	No
	MW-11	non-normal	N/A	107	39	No	N/A	N/A
	MW-12	non-normal	N/A	107	40	No	N/A	N/A
	MW-OW	N/A	98	N/A	48	N/A	-0.182	No
Nitrate+Nitrite	MW-9R	N/A	98	N/A	0.97	N/A	-0.44	Yes
Arsenic	MW-12				***N/A***			
Barium	MW-11				***N/A***			
	MW-12				***N/A***			
Iron	MW-11				***N/A***			
	MW-12				***N/A***			
	MW-OW				***N/A***			
Zinc	MW-12				***N/A***			
	MW-OW				***N/A***			
cis-1,2-Dichloroethene	MW-9R	N/A	98	N/A	6.3	N/A	+0.65	No
	MW-OW	N/A	98	N/A	13	N/A	+0.40	No
Ethyl benzene	MW-OW	N/A	98	N/A	1.2	N/A	0	No
Styrene	MW-OW	N/A	98	N/A	ND	N/A	-0.01	No
Tetrachloroethene	MW-9R	N/A	N/A	N/A	0.61	N/A	-0.01	No

Notes:
N/A = Not analyzed
ND = Non-detect
N/A = Not applicable
? = Insufficient data for test

FIGURES

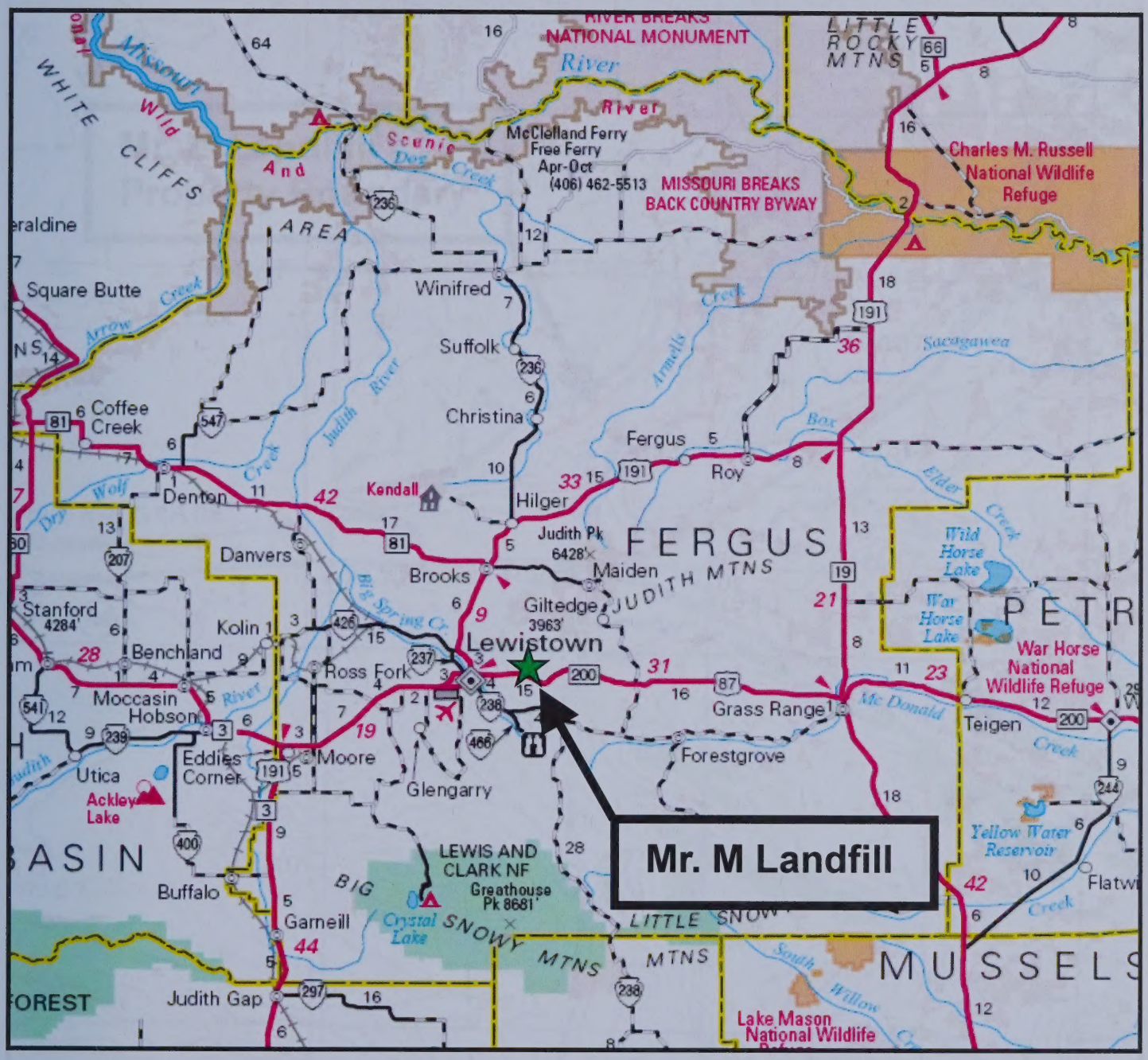


Figure 1: Location Map

Adapted from State of Montana Highway Map.

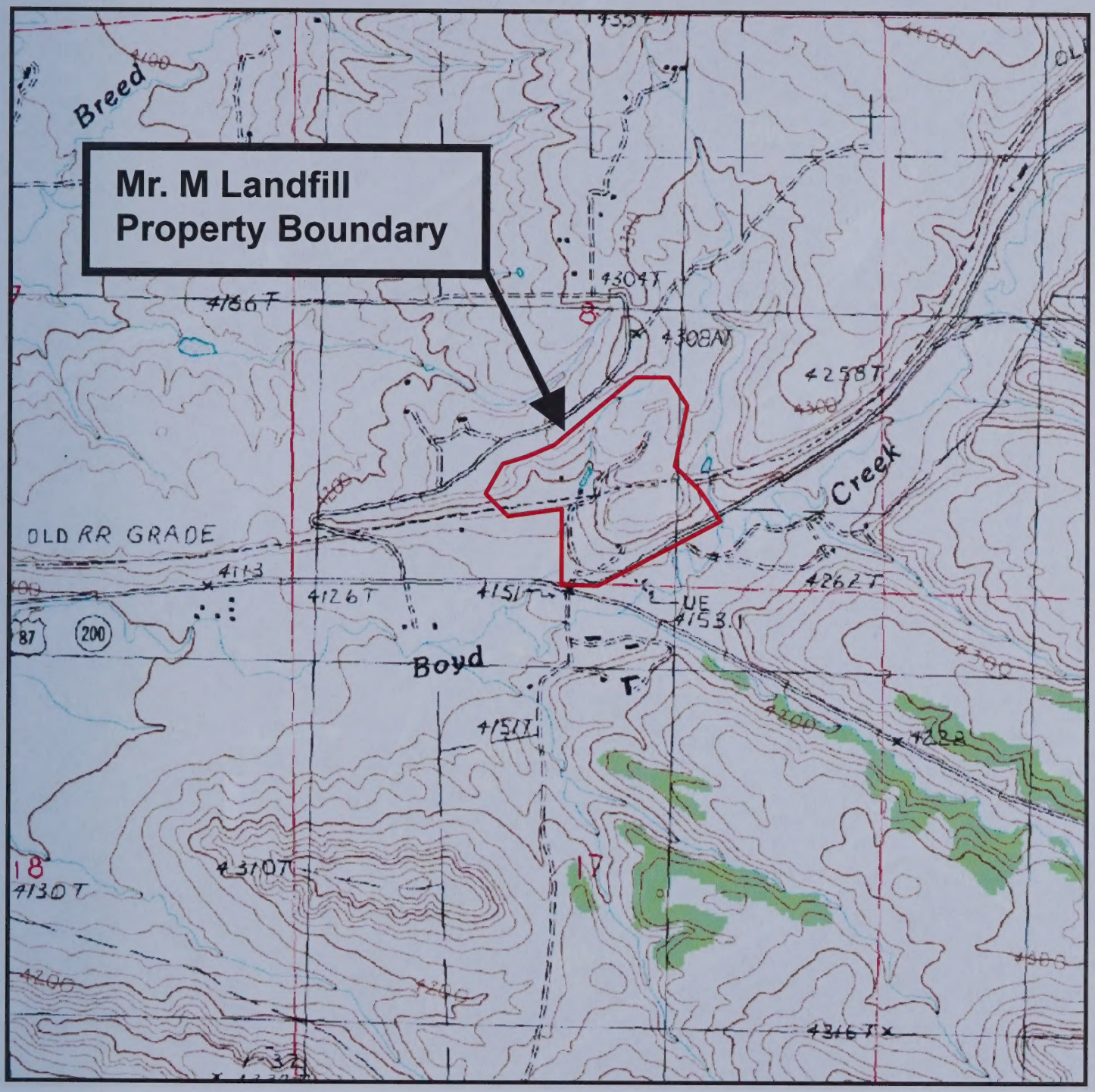


Figure 2: Facility Map

Adapted from USGS Pike Creek 24k Quadrangle.

Figure 3: Locations of Monitoring Points

Base Aerial Photo from 2012.

Figure 4: Groundwater Levels

Base Aerial Photo from 2012.

The reference elevations for MW-9R, MW-11, MW-12, and MW-OW are estimated from topographic contours and field observations.

Figure B-1: Static Water Levels in Shallow Wells

The reference elevations for MW-7R, MW-9R, and MW-10R are estimated from topographic contours and field observations.

Figure B-2: Static Water Levels in Deep Wells

The reference elevations for MW-11, MW-12, and MW-OW are estimated from topographic contours and field observations.

Table B-1: Historical Water Levels

Date	MW-1	MW-2	MW-4	MW-5	MW-6	MW-7	MW-7R	MW-8	MW-9	MW-9R	MW-10	MW-10R	MW-11	MW-12	MW-OW
6/16/93	Dry	Dry	Dry	Dry	Dry	Dry		Dry							NM
10/14/94	NM	NM	NM	NM	NM	NM		NM	Dry		4155.69				NM
12/15/95	4154.12	Dry	Dry	4177.65	4160.64	4173.00		Dry	4140.77		4160.92				NM
3/28/96	4157.37	NM	NM	NM	NM	4176.51		NM	4139.43		4158.09				NM
11/29/05	4154.17	4174.1	NM	4181.82	Dry		Dry	4155.06		4159(1)		4161(1)			NM
12/18/07	Dry	Dry	Dry	4165.54	Dry		Dry	4155.04		4159(1)		4164(1)			4162(1)
1/21/09	4153.12	Dry	NM	4165.75(2)	?(3)		4177(1)(4)	NM		4159(1)		4164(1)			4163(1)
6/1/09	NM	NM	NM	4172.02	NM		NM	NM		4163(1)		4170(1)			4170(1)
10/26/09	NM	NM	NM	4165.23	NM		NM	NM		4160(1)		4164(1)			4163(1)
2/26/10	NM	NM	Dry	4165.44	4160.07		4177(1)	4154.52		4159(1)		NM(5)			4162(1)
6/21/10	NM	NM	NM	4172.91	4171.36		4190(1)	4169.97		4180(1)		NM(5)			4172(1)
10/25/10	NM	NM		4169.50	4166.84					4161(1)			4168(1)	4167(1)	4168(1)
5/23/11	NM	NM		4179.62	4178.04					4183(1)			4172(1)	Flowing(1)(6)	4179(1)
10/17/11	NM	NM		4171.25	4168.30					4160(1)			4175(1)	Flowing(1)(6)	4171(1)
5/22/12	NM	NM		4174.09	4172.42					4166(1)			4176(1)	Flowing(1)(6)	4173(1)
10/23/12	NM	NM		4166.19	NM					4159(1)			4173(1)	4164(1)	4165(1)
10/23/13	NM	NM		4163.84	4160.36					4158(1)			4170(1)	4164(1)	4166(1)

Notes:

NM = Not measured

[ ] = Well not present.

(1) Reference elevation estimated from topographic contours (5ft) and field observations

(2) Deeper than tape, 2 ft. of water in well, DTW calculated from TD recorded 12/18/07

(3) Deeper than tape, DTW unknown

(4) 3 in. of water in well, DTW calculated from TD

(5) Well damaged, measurement not possible.

(6) Well flowing artesian at time of measurement, top of casing elevation 4169ft

APPENDIX A: LABORATORY ANALYTICAL REPORT

ANALYTICAL SUMMARY REPORT

November 21, 2013

MT-DEQ Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H13100494 Quote ID: H876 - Landfill Parameters

Project Name: Mister M Landfill

Energy Laboratories Inc Helena MT received the following 7 samples for MT-DEQ Solid Waste Section on 10/25/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H13100494-001	MW-HW	10/23/13 13:30	10/25/13	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Mercury, Dissolved Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH Digestion, Mercury by CVAA 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H13100494-002	MW-11	10/23/13 14:55	10/25/13	Aqueous	Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H13100494-003	MW-OW	10/23/13 16:25	10/25/13	Aqueous	Same As Above
H13100494-004	MW-9R	10/23/13 17:00	10/25/13	Aqueous	Same As Above
H13100494-005	MW-12	10/24/13 9:50	10/25/13	Aqueous	Same As Above
H13100494-006	MW-12 Dup.	10/24/13 9:50	10/25/13	Aqueous	Conductivity Anions by Ion Chromatography pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H13100494-007	TB 10/15/13 AB HCL3506 LOT3472	10/23/13 13:30	10/25/13	Trip Blank	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By: Wanda Johnson
Project Manager - Helena, MT

Digitally signed by
Wanda Johnson
Date: 2013.11.24 07:18:50 -07:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-001
Client Sample ID: MW-HW

Report Date: 11/21/13
Collection Date: 10/23/13 13:30
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.	H	0.1		A4500-H B	10/25/13 13:46 / cmm
Conductivity @ 25 C	771	umhos/cm		1		A2510 B	10/25/13 13:46 / cmm
INORGANICS							
Chloride	8	mg/L		1		E300.0	10/29/13 19:05 / jaw
Sulfate	37	mg/L		1		E300.0	10/29/13 19:05 / jaw
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L		0.01		E353.2	10/31/13 10:31 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	10/29/13 16:21 / dck
Arsenic	ND	mg/L		0.001		SW6020	10/29/13 16:21 / dck
Barium	0.075	mg/L		0.003		SW6020	10/29/13 16:21 / dck
Beryllium	ND	mg/L		0.0008		SW6020	10/29/13 16:21 / dck
Cadmium	ND	mg/L		0.00003		SW6020	10/29/13 16:21 / dck
Chromium	ND	mg/L		0.01		SW6020	10/29/13 16:21 / dck
Cobalt	ND	mg/L		0.01		SW6020	10/29/13 16:21 / dck
Copper	ND	mg/L		0.002		SW6020	10/29/13 16:21 / dck
Iron	ND	mg/L		0.02		SW6020	10/29/13 16:21 / dck
Lead	ND	mg/L		0.0003		SW6020	10/29/13 16:21 / dck
Mercury	ND	mg/L		5E-06		SW7470A	11/11/13 11:37 / sbk
Nickel	ND	mg/L		0.002		SW6020	10/29/13 16:21 / dck
Selenium	ND	mg/L		0.001		SW6020	10/29/13 16:21 / dck
Silver	ND	mg/L		0.0002		SW6020	10/29/13 16:21 / dck
Thallium	ND	mg/L		0.0002		SW6020	10/29/13 16:21 / dck
Vanadium	ND	mg/L		0.1		SW6020	10/29/13 16:21 / dck
Zinc	0.010	mg/L		0.008		SW6020	10/29/13 16:21 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	10/31/13 21:20 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	10/31/13 21:20 / abb
Benzene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Bromoform	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/31/13 21:20 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Chloroform	0.62	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-001
Client Sample ID: MW-HW

Report Date: 11/21/13
Collection Date: 10/23/13 13:30
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/13 21:20 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/13 21:20 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/31/13 21:20 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/31/13 21:20 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
2-Hexanone	ND	ug/L		10		SW8260B	10/31/13 21:20 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/13 21:20 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/13 21:20 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/13 21:20 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Styrene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Tetrachloroethene	0.58	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Toluene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/13 21:20 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	10/31/13 21:20 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/13 21:20 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/31/13 21:20 / abb
Surr: 1,2-Dichloroethane-d4	90.0	%REC		69-131		SW8260B	10/31/13 21:20 / abb
Surr: Dibromofluoromethane	105	%REC		70-125		SW8260B	10/31/13 21:20 / abb
Surr: p-Bromofluorobenzene	117	%REC		76-123		SW8260B	10/31/13 21:20 / abb
Surr: Toluene-d8	80.0	%REC		80-119		SW8260B	10/31/13 21:20 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-002
Client Sample ID: MW-11

Report Date: 11/21/13
Collection Date: 10/23/13 14:55
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.	H	0.1		A4500-H B	10/25/13 13:48 / cmm
Conductivity @ 25 C	642	umhos/cm		1		A2510 B	10/25/13 13:48 / cmm
INORGANICS							
Chloride	8	mg/L		1		E300.0	10/28/13 14:08 / cmm
Sulfate	39	mg/L		1		E300.0	10/28/13 14:08 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/31/13 10:35 / reh
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	10/31/13 21:51 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	10/31/13 21:51 / abb
Benzene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Bromoform	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/31/13 21:51 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Chloroform	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/13 21:51 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/13 21:51 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/31/13 21:51 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/31/13 21:51 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
2-Hexanone	ND	ug/L		10		SW8260B	10/31/13 21:51 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/13 21:51 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/13 21:51 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-002
Client Sample ID: MW-11

Report Date: 11/21/13
Collection Date: 10/23/13 14:55
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/13 21:51 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Styrene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Tetrachloroethene	0.29	ug/L	J	0.50		SW8260B	10/31/13 21:51 / abb
Toluene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/13 21:51 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	10/31/13 21:51 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/13 21:51 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/31/13 21:51 / abb
Surr: 1,2-Dichloroethane-d4	87.0	%REC		69-131		SW8260B	10/31/13 21:51 / abb
Surr: Dibromofluoromethane	105	%REC		70-125		SW8260B	10/31/13 21:51 / abb
Surr: p-Bromofluorobenzene	109	%REC		76-123		SW8260B	10/31/13 21:51 / abb
Surr: Toluene-d8	82.0	%REC		80-119		SW8260B	10/31/13 21:51 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-003
Client Sample ID: MW-OW

Report Date: 11/21/13
Collection Date: 10/23/13 16:25
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.5	s.u.	H	0.1		A4500-H B	10/25/13 13:50 / cmm
Conductivity @ 25 C	641	umhos/cm		1		A2510 B	10/25/13 13:50 / cmm
INORGANICS							
Chloride	3	mg/L		1		E300.0	10/28/13 14:21 / cmm
Sulfate	48	mg/L		1		E300.0	10/28/13 14:21 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/31/13 10:39 / reh
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	10/31/13 22:21 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	10/31/13 22:21 / abb
Benzene	0.53	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Bromoform	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/31/13 22:21 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Chloroform	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/13 22:21 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/13 22:21 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
cis-1,2-Dichloroethene	13	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/31/13 22:21 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/31/13 22:21 / abb
Ethylbenzene	1.2	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
2-Hexanone	ND	ug/L		10		SW8260B	10/31/13 22:21 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/13 22:21 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/13 22:21 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-003
Client Sample ID: MW-OW

Report Date: 11/21/13
Collection Date: 10/23/13 16:25
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/13 22:21 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Styrene	1.9	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Toluene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/13 22:21 / abb
Vinyl chloride	0.42	ug/L		0.40		SW8260B	10/31/13 22:21 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/13 22:21 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/31/13 22:21 / abb
Surr: 1,2-Dichloroethane-d4	85.0	%REC		69-131		SW8260B	10/31/13 22:21 / abb
Surr: Dibromofluoromethane	108	%REC		70-125		SW8260B	10/31/13 22:21 / abb
Surr: p-Bromofluorobenzene	106	%REC		76-123		SW8260B	10/31/13 22:21 / abb
Surr: Toluene-d8	86.0	%REC		80-119		SW8260B	10/31/13 22:21 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-004
Client Sample ID: MW-9R

Report Date: 11/21/13
Collection Date: 10/23/13 17:00
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.	H	0.1	-	A4500-H B	10/25/13 13:53 / cmm
Conductivity @ 25 C	1030	umhos/cm		1		A2510 B	10/25/13 13:53 / cmm
INORGANICS							
Chloride	24	mg/L		1		E300.0	11/18/13 14:52 / cmm
Sulfate	68	mg/L		1		E300.0	11/18/13 14:52 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.97	mg/L	D	0.02		E353.2	10/31/13 10:40 / reh
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	11/04/13 17:41 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	11/04/13 17:41 / abb
Benzene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Bromoform	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	11/04/13 17:41 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Chloroform	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/04/13 17:41 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/04/13 17:41 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
cis-1,2-Dichloroethene	6.3	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	11/04/13 17:41 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	11/04/13 17:41 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
2-Hexanone	ND	ug/L		10		SW8260B	11/04/13 17:41 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/04/13 17:41 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/04/13 17:41 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-004
Client Sample ID: MW-9R

Report Date: 11/21/13
Collection Date: 10/23/13 17:00
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/04/13 17:41 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Styrene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Tetrachloroethene	0.61	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Toluene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/04/13 17:41 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	11/04/13 17:41 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/04/13 17:41 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	11/04/13 17:41 / abb
Surr: 1,2-Dichloroethane-d4	85.0	%REC		69-131		SW8260B	11/04/13 17:41 / abb
Surr: Dibromofluoromethane	105	%REC		70-125		SW8260B	11/04/13 17:41 / abb
Surr: p-Bromofluorobenzene	110	%REC		76-123		SW8260B	11/04/13 17:41 / abb
Surr: Toluene-d8	84.0	%REC		80-119		SW8260B	11/04/13 17:41 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-005
Client Sample ID: MW-12

Report Date: 11/21/13
Collection Date: 10/24/13 09:50
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.	H	0.1		A4500-H B	10/25/13 13:55 / cmm
Conductivity @ 25 C	686	umhos/cm		1		A2510 B	10/25/13 13:55 / cmm
INORGANICS							
Chloride	4	mg/L		1		E300.0	11/18/13 16:03 / cmm
Sulfate	40	mg/L		1		E300.0	11/18/13 16:03 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/31/13 10:41 / reh
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	11/04/13 17:11 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	11/04/13 17:11 / abb
Benzene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Bromoform	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Carbon disulfide	1.8	ug/L		1.0		SW8260B	11/04/13 17:11 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Chloroform	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/04/13 17:11 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/04/13 17:11 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
cis-1,2-Dichloroethene	0.22	ug/L	J	0.50		SW8260B	11/04/13 17:11 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	11/04/13 17:11 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	11/04/13 17:11 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
2-Hexanone	ND	ug/L		10		SW8260B	11/04/13 17:11 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/04/13 17:11 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/04/13 17:11 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-005
Client Sample ID: MW-12

Report Date: 11/21/13
Collection Date: 10/24/13 09:50
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/04/13 17:11 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Styrene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Toluene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/04/13 17:11 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	11/04/13 17:11 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/04/13 17:11 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	11/04/13 17:11 / abb
Surr: 1,2-Dichloroethane-d4	86.0	%REC		69-131		SW8260B	11/04/13 17:11 / abb
Surr: Dibromofluoromethane	104	%REC		70-125		SW8260B	11/04/13 17:11 / abb
Surr: p-Bromofluorobenzene	110	%REC		76-123		SW8260B	11/04/13 17:11 / abb
Surr: Toluene-d8	83.0	%REC		80-119		SW8260B	11/04/13 17:11 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-006
Client Sample ID: MW-12 Dup.

Report Date: 11/21/13
Collection Date: 10/24/13 09:50
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.	H	0.1		A4500-H B	10/25/13 13:57 / cmm
Conductivity @ 25 C	686	umhos/cm		1		A2510 B	10/25/13 13:57 / cmm
INORGANICS							
Chloride	4	mg/L		1		E300.0	10/28/13 14:58 / cmm
Sulfate	37	mg/L		1		E300.0	10/28/13 14:58 / cmm
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	11/04/13 16:40 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	11/04/13 16:40 / abb
Benzene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Bromoform	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Carbon disulfide	1.5	ug/L		1.0		SW8260B	11/04/13 16:40 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Chloroform	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/04/13 16:40 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/04/13 16:40 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
cis-1,2-Dichloroethene	0.24	ug/L	J	0.50		SW8260B	11/04/13 16:40 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	11/04/13 16:40 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	11/04/13 16:40 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
2-Hexanone	ND	ug/L		10		SW8260B	11/04/13 16:40 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/04/13 16:40 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/04/13 16:40 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/04/13 16:40 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-006
Client Sample ID: MW-12 Dup.

Report Date: 11/21/13
Collection Date: 10/24/13 09:50
DateReceived: 10/25/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Styrene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Toluene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/04/13 16:40 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	11/04/13 16:40 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/04/13 16:40 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	11/04/13 16:40 / abb
Surr: 1,2-Dichloroethane-d4	87.0	%REC		69-131		SW8260B	11/04/13 16:40 / abb
Surr: Dibromofluoromethane	104	%REC		70-125		SW8260B	11/04/13 16:40 / abb
Surr: p-Bromofluorobenzene	119	%REC		76-123		SW8260B	11/04/13 16:40 / abb
Surr: Toluene-d8	81.0	%REC		80-119		SW8260B	11/04/13 16:40 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-007
Client Sample ID: TB 10/15/13 AB HCL3506 LOT3472

Report Date: 11/21/13
Collection Date: 10/23/13 13:30
DateReceived: 10/25/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		10		SW8260B	11/04/13 16:10 / abb
Acrylonitrile	ND	ug/L		3.0		SW8260B	11/04/13 16:10 / abb
Benzene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Bromoform	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	11/04/13 16:10 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Chloroform	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	11/04/13 16:10 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	11/04/13 16:10 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	11/04/13 16:10 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	11/04/13 16:10 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
2-Hexanone	ND	ug/L		10		SW8260B	11/04/13 16:10 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	11/04/13 16:10 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	11/04/13 16:10 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	11/04/13 16:10 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Styrene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Toluene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H13100494-007
Client Sample ID: TB 10/15/13 AB HCL3506 LOT3472

Report Date: 11/21/13
Collection Date: 10/23/13 13:30
DateReceived: 10/25/13
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	11/04/13 16:10 / abb
Vinyl chloride	ND	ug/L		0.40		SW8260B	11/04/13 16:10 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	11/04/13 16:10 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	11/04/13 16:10 / abb
Surr: 1,2-Dichloroethane-d4	82.0	%REC		69-131		SW8260B	11/04/13 16:10 / abb
Surr: Dibromofluoromethane	102	%REC		70-125		SW8260B	11/04/13 16:10 / abb
Surr: p-Bromofluorobenzene	113	%REC		76-123		SW8260B	11/04/13 16:10 / abb
Surr: Toluene-d8	86.0	%REC		80-119		SW8260B	11/04/13 16:10 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B										Batch: R92281
Sample ID: SC 150		Initial Calibration Verification Standard				Run: PHSC_101-H_131025A				10/25/13 12:06
Conductivity @ 25 C		148	umhos/cm	1.0	99	90	110			
Sample ID: SC 5000		Initial Calibration Verification Standard				Run: PHSC_101-H_131025A				10/25/13 12:09
Conductivity @ 25 C		4890	umhos/cm	1.0	98	90	110			
Sample ID: SC 20000		Initial Calibration Verification Standard				Run: PHSC_101-H_131025A				10/25/13 12:11
Conductivity @ 25 C		19700	umhos/cm	1.0	98	90	110			
Sample ID: SC 2ND 1000		Laboratory Control Sample				Run: PHSC_101-H_131025A				10/25/13 12:14
Conductivity @ 25 C		977	umhos/cm	1.0	98	90	110			
Sample ID: H13100494-006ADUP		Sample Duplicate				Run: PHSC_101-H_131025A				10/25/13 14:00
Conductivity @ 25 C		689	umhos/cm	1.0				0.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B										Analytical Run: PHSC_101-H_131025A
Sample ID: pH 7		Initial Calibration Verification Standard								10/25/13 12:04
pH		7.0	s.u.	0.1	100	98	102			
Method: A4500-H B										Batch: R92281
Sample ID: H13100494-006ADUP		Sample Duplicate				Run: PHSC_101-H_131025A				10/25/13 14:00
pH		7.2	s.u.	0.1				0.3	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E245.1									Analytical Run: HGCV202-H_131111A	
Sample ID: ICV		Initial Calibration Verification Standard								11/11/13 09:52
Mercury		0.00020	mg/L	0.00010	100	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC102-H_131028A	
Sample ID: ICV	2	Initial Calibration Verification Standard							10/28/13 08:53	
Chloride		99	mg/L	1.0	99	90	110			
Sulfate		420	mg/L	1.0	104	90	110			
Sample ID: CCV102813-2	2	Continuing Calibration Verification Standard							10/28/13 12:27	
Chloride		100	mg/L	1.0	100	90	110			
Sulfate		420	mg/L	1.0	104	90	110			
Method: E300.0									Batch: R92341	
Sample ID: ICB	2	Method Blank				Run: IC102-H_131028A			10/28/13 09:05	
Chloride		ND	mg/L	0.008						
Sulfate		0.1	mg/L	0.08						
Sample ID: LFB	2	Laboratory Fortified Blank				Run: IC102-H_131028A			10/28/13 09:18	
Chloride		48	mg/L	1.0	96	90	110			
Sulfate		210	mg/L	1.0	103	90	110			
Sample ID: H13100495-002AMS	2	Sample Matrix Spike				Run: IC102-H_131028A			10/28/13 16:36	
Chloride		67	mg/L	1.0	102	90	110			
Sulfate		330	mg/L	1.0	111	90	110			S
Sample ID: H13100495-002AMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_131028A			10/28/13 16:48	
Chloride		67	mg/L	1.0	101	90	110	0.5	20	
Sulfate		330	mg/L	1.0	111	90	110	0.0	20	S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC102-H_131029A	
Sample ID: ICV	2	Initial Calibration Verification Standard							10/29/13 17:37	
Chloride		100	mg/L	1.0	105	90	110			
Sulfate		420	mg/L	1.0	104	90	110			
Sample ID: CCV102913-1	2	Continuing Calibration Verification Standard							10/29/13 18:27	
Chloride		100	mg/L	1.0	103	90	110			
Sulfate		410	mg/L	1.0	103	90	110			
Method: E300.0									Batch: R92374	
Sample ID: ICB	2	Method Blank				Run: IC102-H_131029A			10/29/13 17:50	
Chloride		ND	mg/L	0.008						
Sulfate		0.1	mg/L	0.08						
Sample ID: LFB	2	Laboratory Fortified Blank				Run: IC102-H_131029A			10/29/13 18:02	
Chloride		49	mg/L	1.0	98	90	110			
Sulfate		200	mg/L	1.0	99	90	110			
Sample ID: LFBD	2	Laboratory Fortified Blank				Run: IC102-H_131029A			10/29/13 18:15	
Chloride		48	mg/L	1.0	96	90	110			
Sulfate		200	mg/L	1.0	98	90	110			
Sample ID: H13100517-004AMS	2	Sample Matrix Spike				Run: IC102-H_131029A			10/29/13 20:59	
Chloride		68	mg/L	1.0	98	90	110			
Sulfate		260	mg/L	1.0	103	90	110			
Sample ID: H13100517-004AMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_131029A			10/29/13 21:11	
Chloride		68	mg/L	1.0	99	90	110	0.5	20	
Sulfate		260	mg/L	1.0	103	90	110	0.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC102-H_131118A	
Sample ID: ICV	2	Initial Calibration Verification Standard							11/18/13 13:24	
Chloride		110	mg/L	1.0	105	90	110			
Sulfate		420	mg/L	1.0	106	90	110			
Sample ID: CCV111813-1	2	Continuing Calibration Verification Standard							11/18/13 14:27	
Chloride		110	mg/L	1.0	105	90	110			
Sulfate		420	mg/L	1.0	106	90	110			
Method: E300.0									Batch: R92903	
Sample ID: ICB	2	Method Blank				Run: IC102-H_131118A			11/18/13 13:37	
Chloride		0.03	mg/L	0.008						
Sulfate		ND	mg/L	0.08						
Sample ID: LFB	2	Laboratory Fortified Blank				Run: IC102-H_131118A			11/18/13 13:49	
Chloride		50	mg/L	1.0	100	90	110			
Sulfate		200	mg/L	1.0	101	90	110			
Sample ID: H13100494-004AMS	2	Sample Matrix Spike				Run: IC102-H_131118A			11/18/13 15:38	
Chloride		75	mg/L	1.0	103	90	110			
Sulfate		280	mg/L	1.0	104	90	110			
Sample ID: H13100494-004AMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_131118A			11/18/13 15:50	
Chloride		77	mg/L	1.0	106	90	110	1.6	20	
Sulfate		280	mg/L	1.0	107	90	110	2.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA203-HE_131031A	
Sample ID: ICV		Initial Calibration Verification Standard								10/31/13 10:15
Nitrogen, Nitrate+Nitrite as N		0.995	mg/L	0.010	100	90	110			
Sample ID: CCV		Continuing Calibration Verification Standard								10/31/13 10:17
Nitrogen, Nitrate+Nitrite as N		0.485	mg/L	0.010	97	90	110			
Sample ID: ICB		Initial Calibration Blank, Instrument Blank								10/31/13 10:18
Nitrogen, Nitrate+Nitrite as N		-0.00616	mg/L	0.010		0	0			
Sample ID: CCV		Continuing Calibration Verification Standard								10/31/13 10:37
Nitrogen, Nitrate+Nitrite as N		0.476	mg/L	0.010	95	90	110			
Method: E353.2										Batch: R92410
Sample ID: LFB		Laboratory Fortified Blank				Run: FIA203-HE_131031A				10/31/13 10:16
Nitrogen, Nitrate+Nitrite as N		0.978	mg/L	0.011	98	90	110			
Sample ID: MBLK		Method Blank				Run: FIA203-HE_131031A				10/31/13 10:21
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.001						
Sample ID: H13100494-001BMS		Sample Matrix Spike				Run: FIA203-HE_131031A				10/31/13 10:33
Nitrogen, Nitrate+Nitrite as N		0.938	mg/L	0.011	93	90	110			
Sample ID: H13100494-001BMSD		Sample Matrix Spike Duplicate				Run: FIA203-HE_131031A				10/31/13 10:34
Nitrogen, Nitrate+Nitrite as N		0.968	mg/L	0.011	96	90	110	3.2	20	
Sample ID: H13100494-005BMS		Sample Matrix Spike				Run: FIA203-HE_131031A				10/31/13 10:42
Nitrogen, Nitrate+Nitrite as N		0.932	mg/L	0.011	93	90	110			
Sample ID: H13100494-005BMSD		Sample Matrix Spike Duplicate				Run: FIA203-HE_131031A				10/31/13 10:43
Nitrogen, Nitrate+Nitrite as N		0.939	mg/L	0.011	94	90	110	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS204-B_131029B	
Sample ID: ICV STD	16	Initial Calibration Verification Standard							10/29/13 10:14	
Antimony		0.0590	mg/L	0.0010	98	90	110			
Arsenic		0.0580	mg/L	0.0010	97	90	110			
Barium		0.0581	mg/L	0.0010	97	90	110			
Beryllium		0.0293	mg/L	0.0010	98	90	110			
Cadmium		0.0302	mg/L	0.0010	101	90	110			
Chromium		0.0596	mg/L	0.0010	99	90	110			
Cobalt		0.0588	mg/L	0.0010	98	90	110			
Copper		0.0597	mg/L	0.0010	100	90	110			
Iron		0.300	mg/L	0.0010	100	90	110			
Lead		0.0572	mg/L	0.0010	95	90	110			
Nickel		0.0594	mg/L	0.0010	99	90	110			
Selenium		0.0604	mg/L	0.0010	101	90	110			
Silver		0.0301	mg/L	0.0010	100	90	110			
Thallium		0.0580	mg/L	0.0010	97	90	110			
Vanadium		0.0574	mg/L	0.0010	96	90	110			
Zinc		0.0606	mg/L	0.0010	101	90	110			
Sample ID: ICV STD	16	Initial Calibration Verification Standard							10/29/13 19:01	
Antimony		0.0599	mg/L	0.0010	100	90	110			
Arsenic		0.0586	mg/L	0.0010	98	90	110			
Barium		0.0588	mg/L	0.0010	98	90	110			
Beryllium		0.0305	mg/L	0.0010	102	90	110			
Cadmium		0.0310	mg/L	0.0010	103	90	110			
Chromium		0.0592	mg/L	0.0010	99	90	110			
Cobalt		0.0594	mg/L	0.0010	99	90	110			
Copper		0.0599	mg/L	0.0010	100	90	110			
Iron		0.295	mg/L	0.0010	98	90	110			
Lead		0.0588	mg/L	0.0010	98	90	110			
Nickel		0.0595	mg/L	0.0010	99	90	110			
Selenium		0.0597	mg/L	0.0010	100	90	110			
Silver		0.0302	mg/L	0.0010	101	90	110			
Thallium		0.0596	mg/L	0.0010	99	90	110			
Vanadium		0.0574	mg/L	0.0010	96	90	110			
Zinc		0.0594	mg/L	0.0010	99	90	110			
Method: SW6020									Batch: R92372	
Sample ID: ICB	16	Method Blank				Run: ICPMS204-B_131029B			10/29/13 11:43	
Antimony		ND	mg/L	2E-05						
Arsenic		ND	mg/L	7E-05						
Barium		ND	mg/L	4E-05						
Beryllium		ND	mg/L	2E-05						
Cadmium		ND	mg/L	7E-06						
Chromium		ND	mg/L	4E-05						
Cobalt		ND	mg/L	2E-05						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R92372
Sample ID: ICB	16	Method Blank				Run: ICPMS204-B_131029B				10/29/13 11:43
Copper		ND	mg/L	3E-05						
Iron		0.003	mg/L	0.0002						
Lead		ND	mg/L	6E-06						
Nickel		ND	mg/L	6E-05						
Selenium		ND	mg/L	5E-05						
Silver		ND	mg/L	4E-05						
Thallium		ND	mg/L	1E-05						
Vanadium		ND	mg/L	2E-05						
Zinc		ND	mg/L	0.0003						
Sample ID: LFB	16	Laboratory Fortified Blank				Run: ICPMS204-B_131029B				10/29/13 11:48
Antimony		0.0494	mg/L	0.0010	99	80	120			
Arsenic		0.0496	mg/L	0.0010	99	80	120			
Barium		0.0487	mg/L	0.0010	97	80	120			
Beryllium		0.0467	mg/L	0.0010	93	80	120			
Cadmium		0.0518	mg/L	0.0010	104	80	120			
Chromium		0.0490	mg/L	0.0010	98	80	120			
Cobalt		0.0546	mg/L	0.0010	109	80	120			
Copper		0.0498	mg/L	0.0010	100	80	120			
Iron		0.156	mg/L	0.0010	102	80	120			
Lead		0.0492	mg/L	0.0010	99	80	120			
Nickel		0.0500	mg/L	0.0010	100	80	120			
Selenium		0.0498	mg/L	0.0010	100	80	120			
Silver		0.0206	mg/L	0.0010	103	80	120			
Thallium		0.0481	mg/L	0.0010	96	80	120			
Vanadium		0.0479	mg/L	0.0010	96	80	120			
Zinc		0.0515	mg/L	0.0010	103	80	120			
Sample ID: H13100494-001CMS	16	Sample Matrix Spike				Run: ICPMS204-B_131029B				10/29/13 16:30
Antimony		0.0507	mg/L	0.0010	101	75	125			
Arsenic		0.0539	mg/L	0.0010	108	75	125			
Barium		0.123	mg/L	0.050	96	75	125			
Beryllium		0.0502	mg/L	0.0010	100	75	125			
Cadmium		0.0485	mg/L	0.0010	97	75	125			
Chromium		0.0486	mg/L	0.0050	97	75	125			
Cobalt		0.0500	mg/L	0.0050	99	75	125			
Copper		0.0478	mg/L	0.0050	94	75	125			
Iron		0.149	mg/L	0.030	98	75	125			
Lead		0.0497	mg/L	0.0010	99	75	125			
Nickel		0.0476	mg/L	0.0050	95	75	125			
Selenium		0.0613	mg/L	0.0010	122	75	125			
Silver		0.0195	mg/L	0.0010	98	75	125			
Thallium		0.0488	mg/L	0.00050	98	75	125			
Vanadium		0.0489	mg/L	0.010	98	75	125			
Zinc		0.0583	mg/L	0.010	97	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R92372
Sample ID: H13100494-001CMS	16	Sample Matrix Spike				Run: ICPMS204-B_131029B			10/29/13 16:30	
Sample ID: H13100494-001CMSD	16	Sample Matrix Spike Duplicate				Run: ICPMS204-B_131029B			10/29/13 16:34	
Antimony		0.0501	mg/L	0.0010	100	75	125	1.2	20	
Arsenic		0.0535	mg/L	0.0010	107	75	125	0.7	20	
Barium		0.121	mg/L	0.050	93	75	125	1.4	20	
Beryllium		0.0495	mg/L	0.0010	99	75	125	1.6	20	
Cadmium		0.0482	mg/L	0.0010	96	75	125	0.6	20	
Chromium		0.0481	mg/L	0.0050	96	75	125	1.1	20	
Cobalt		0.0491	mg/L	0.0050	97	75	125	1.9	20	
Copper		0.0476	mg/L	0.0050	94	75	125	0.5	20	
Iron		0.151	mg/L	0.030	99	75	125	1.5	20	
Lead		0.0497	mg/L	0.0010	99	75	125	0.1	20	
Nickel		0.0475	mg/L	0.0050	95	75	125	0.1	20	
Selenium		0.0619	mg/L	0.0010	123	75	125	1.0	20	
Silver		0.0196	mg/L	0.0010	98	75	125	0.3	20	
Thallium		0.0498	mg/L	0.00050	100	75	125	2.0	20	
Vanadium		0.0484	mg/L	0.010	97	75	125	1.0	20	
Zinc		0.0579	mg/L	0.010	96	75	125	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW7470A										Batch: 22379
Sample ID: MB-22379		Method Blank				Run: HGCV202-H_131111A				11/11/13 11:26
Mercury		ND	mg/L	2E-05						
Sample ID: LCS-22379		Laboratory Control Sample				Run: HGCV202-H_131111A				11/11/13 11:29
Mercury		0.00037	mg/L	0.00010	93	90	110			
Sample ID: H13100494-001CMS		Sample Matrix Spike				Run: HGCV202-H_131111A				11/11/13 11:41
Mercury		0.00041	mg/L	0.00010	103	85	115			
Sample ID: H13100494-001CMSD		Sample Matrix Spike Duplicate				Run: HGCV202-H_131111A				11/11/13 11:45
Mercury		0.00036	mg/L	0.00010	91	85	115	13	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R92461
Sample ID: 103113_CCV_2	54	Continuing Calibration Verification Standard								10/31/13 12:32
trans-1,4-Dichloro-2-butene		5.96	ug/L	1.0	119	70	130			
Acetone		47.6	ug/L	20	95	70	130			
Acrylonitrile		41.6	ug/L	20	83	70	130			
Benzene		5.28	ug/L	1.0	106	70	130			
Bromochloromethane		4.60	ug/L	1.0	92	70	130			
Bromodichloromethane		5.08	ug/L	1.0	102	70	130			
Bromoform		5.00	ug/L	1.0	100	70	130			
Bromomethane		5.64	ug/L	1.0	113	70	130			
Carbon disulfide		5.80	ug/L	1.0	116	70	130			
Carbon tetrachloride		5.32	ug/L	1.0	106	70	130			
Chlorobenzene		5.36	ug/L	1.0	107	70	130			
Chlorodibromomethane		4.64	ug/L	1.0	93	70	130			
Chloroethane		6.12	ug/L	1.0	122	70	130			
Chloroform		4.80	ug/L	1.0	96	80	120			
Chloromethane		6.40	ug/L	1.0	128	70	130			
1,2-Dibromo-3-chloropropane		4.40	ug/L	1.0	88	70	130			
1,2-Dibromoethane		4.32	ug/L	1.0	86	70	130			
Dibromomethane		4.44	ug/L	1.0	89	70	130			
1,2-Dichlorobenzene		5.00	ug/L	1.0	100	70	130			
1,4-Dichlorobenzene		5.44	ug/L	1.0	109	70	130			
Dichlorodifluoromethane		5.56	ug/L	1.0	111	70	130			
1,1-Dichloroethane		5.36	ug/L	1.0	107	70	130			
1,2-Dichloroethane		4.40	ug/L	1.0	88	70	130			
1,1-Dichloroethene		6.00	ug/L	1.0	120	80	120			
cis-1,2-Dichloroethene		5.32	ug/L	1.0	106	70	130			
trans-1,2-Dichloroethene		5.64	ug/L	1.0	113	70	130			
1,2-Dichloropropane		5.40	ug/L	1.0	108	80	120			
cis-1,3-Dichloropropene		4.88	ug/L	1.0	98	70	130			
trans-1,3-Dichloropropene		4.56	ug/L	1.0	91	70	130			
Ethylbenzene		5.04	ug/L	1.0	101	80	120			
2-Hexanone		44.8	ug/L	20	90	70	130			
Iodomethane		5.80	ug/L	1.0	116	70	130			
Methyl ethyl ketone		44.8	ug/L	20	90	70	130			
Methyl isobutyl ketone		50.4	ug/L	20	101	70	130			
Methylene chloride		4.56	ug/L	1.0	91	70	130			
Styrene		4.92	ug/L	1.0	98	70	130			
1,1,1,2-Tetrachloroethane		4.84	ug/L	1.0	97	70	130			
1,1,2,2-Tetrachloroethane		5.64	ug/L	1.0	113	70	130			
Tetrachloroethene		5.24	ug/L	1.0	105	70	130			
Toluene		5.04	ug/L	1.0	101	80	120			
1,1,1-Trichloroethane		5.36	ug/L	1.0	107	70	130			
1,1,2-Trichloroethane		4.84	ug/L	1.0	97	70	130			
Trichloroethene		5.60	ug/L	1.0	112	70	130			
Trichlorofluoromethane		5.96	ug/L	1.0	119	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R92461
Sample ID: 103113_CCV_2	54	Continuing Calibration Verification Standard								10/31/13 12:32
1,2,3-Trichloropropane		5.52	ug/L	1.0	110	70	130			
Vinyl acetate		4.76	ug/L	1.0	95	70	130			
Vinyl chloride		5.48	ug/L	1.0	110	80	120			
m+p-Xylenes		9.72	ug/L	1.0	97	70	130			
o-Xylene		5.04	ug/L	1.0	101	70	130			
Xylenes, Total		14.8	ug/L	1.0	98	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	93	69	131			
Surr: Dibromofluoromethane				1.0	102	70	125			
Surr: p-Bromofluorobenzene				1.0	126	76	123			S
Surr: Toluene-d8				1.0	94	80	119			
Method: SW8260B										Batch: R92461
Sample ID: 103113_LCS_3	54	Laboratory Control Sample				Run: 1SATURN_131031A				10/31/13 14:02
trans-1,4-Dichloro-2-butene		5.60	ug/L	1.0	112	67	132			
Acetone		49.6	ug/L	20	99	55	144			
Acrylonitrile		43.2	ug/L	20	86	63	134			
Benzene		4.92	ug/L	1.0	98	69	129			
Bromochloromethane		4.52	ug/L	1.0	90	72	125			
Bromodichloromethane		4.48	ug/L	1.0	90	71	122			
Bromoform		4.80	ug/L	1.0	96	65	130			
Bromomethane		5.12	ug/L	1.0	102	60	136			
Carbon disulfide		5.68	ug/L	1.0	114	71	135			
Carbon tetrachloride		5.16	ug/L	1.0	103	77	121			
Chlorobenzene		4.68	ug/L	1.0	94	78	120			
Chlorodibromomethane		4.28	ug/L	1.0	86	70	122			
Chloroethane		5.68	ug/L	1.0	114	62	135			
Chloroform		4.76	ug/L	1.0	95	71	121			
Chloromethane		6.40	ug/L	1.0	128	66	139			
1,2-Dibromo-3-chloropropane		4.60	ug/L	1.0	92	59	130			
1,2-Dibromoethane		4.04	ug/L	1.0	81	60	137			
Dibromomethane		4.00	ug/L	1.0	80	69	122			
1,2-Dichlorobenzene		4.56	ug/L	1.0	91	74	122			
1,4-Dichlorobenzene		5.20	ug/L	1.0	104	75	122			
Dichlorodifluoromethane		5.76	ug/L	1.0	115	57	144			
1,1-Dichloroethane		5.16	ug/L	1.0	103	76	125			
1,2-Dichloroethane		4.08	ug/L	1.0	82	69	131			
1,1-Dichloroethene		5.12	ug/L	1.0	102	67	129			
cis-1,2-Dichloroethene		5.32	ug/L	1.0	106	75	122			
trans-1,2-Dichloroethene		5.64	ug/L	1.0	113	75	124			
1,2-Dichloropropane		5.00	ug/L	1.0	100	75	127			
cis-1,3-Dichloropropene		4.72	ug/L	1.0	94	73	124			
trans-1,3-Dichloropropene		4.36	ug/L	1.0	87	72	127			
Ethylbenzene		4.48	ug/L	1.0	90	74	125			
2-Hexanone		45.2	ug/L	20	90	70	128			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92461
Sample ID: 103113_LCS_3	54	Laboratory Control Sample				Run: 1SATURN_131031A				10/31/13 14:02
Iodomethane		3.70	ug/L	1.0	74	52	130			
Methyl ethyl ketone		46.0	ug/L	20	92	56	141			
Methyl isobutyl ketone		49.2	ug/L	20	98	71	121			
Methylene chloride		4.08	ug/L	1.0	82	61	125			
Styrene		4.60	ug/L	1.0	92	75	120			
1,1,1,2-Tetrachloroethane		4.28	ug/L	1.0	86	76	122			
1,1,2,2-Tetrachloroethane		4.80	ug/L	1.0	96	67	124			
Tetrachloroethene		4.80	ug/L	1.0	96	75	126			
Toluene		4.56	ug/L	1.0	91	73	122			
1,1,1-Trichloroethane		5.36	ug/L	1.0	107	76	124			
1,1,2-Trichloroethane		4.72	ug/L	1.0	94	72	125			
Trichloroethene		5.04	ug/L	1.0	101	72	126			
Trichlorofluoromethane		5.72	ug/L	1.0	114	73	131			
1,2,3-Trichloropropane		5.32	ug/L	1.0	106	58	142			
Vinyl acetate		4.52	ug/L	1.0	90	47	154			
Vinyl chloride		5.56	ug/L	1.0	111	69	129			
m+p-Xylenes		9.04	ug/L	1.0	90	72	124			
o-Xylene		4.60	ug/L	1.0	92	74	123			
Xylenes, Total		13.6	ug/L	1.0	91	72	124			
Surr: 1,2-Dichloroethane-d4				1.0	88	69	131			
Surr: Dibromofluoromethane				1.0	100	70	125			
Surr: p-Bromofluorobenzene				1.0	121	76	123			
Surr: Toluene-d8				1.0	93	80	119			
Sample ID: 103113_MBLK_5	54	Method Blank				Run: 1SATURN_131031A				10/31/13 15:13
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92461
Sample ID: 103113_MBLK_5	54	Method Blank				Run: 1SATURN_131031A				10/31/13 15:13
1,4-Dichlorobenzene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	87	69	131			
Surr: Dibromofluoromethane				1.0	105	70	125			
Surr: p-Bromofluorobenzene				1.0	110	76	123			
Surr: Toluene-d8				1.0	83	80	119			
Sample ID: H13100494-003CMS	54	Sample Matrix Spike				Run: 1SATURN_131031A				10/31/13 22:51
trans-1,4-Dichloro-2-butene		9.52	ug/L	1.0	95	67	132			
Acetone		82.4	ug/L	40	82	55	144			
Acrylonitrile		88.0	ug/L	40	88	63	134			
Benzene		10.5	ug/L	1.0	99	69	129			
Bromochloromethane		9.04	ug/L	1.0	90	72	125			
Bromodichloromethane		9.36	ug/L	1.0	94	71	122			
Bromoform		9.12	ug/L	1.0	91	65	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92461
Sample ID: H13100494-003CMS	54	Sample Matrix Spike				Run: 1SATURN_131031A				10/31/13 22:51
Bromomethane		12.2	ug/L	1.0	122	60	136			
Carbon disulfide		10.6	ug/L	1.0	106	71	135			
Carbon tetrachloride		10.3	ug/L	1.0	103	77	121			
Chlorobenzene		9.92	ug/L	1.0	99	78	120			
Chlorodibromomethane		8.32	ug/L	1.0	83	70	122			
Chloroethane		11.2	ug/L	1.0	112	62	135			
Chloroform		9.44	ug/L	1.0	94	71	121			
Chloromethane		11.8	ug/L	1.0	118	66	139			
1,2-Dibromo-3-chloropropane		7.88	ug/L	1.0	79	59	130			
1,2-Dibromoethane		7.89	ug/L	1.0	79	60	137			
Dibromomethane		8.72	ug/L	1.0	87	69	122			
1,2-Dichlorobenzene		8.96	ug/L	1.0	90	74	122			
1,4-Dichlorobenzene		9.28	ug/L	1.0	93	75	122			
Dichlorodifluoromethane		10.4	ug/L	1.0	104	57	144			
1,1-Dichloroethane		10.3	ug/L	1.0	103	76	125			
1,2-Dichloroethane		8.32	ug/L	1.0	83	69	131			
1,1-Dichloroethene		11.0	ug/L	1.0	110	67	129			
cis-1,2-Dichloroethene		21.4	ug/L	1.0	87	75	122			
trans-1,2-Dichloroethene		10.2	ug/L	1.0	102	75	124			
1,2-Dichloropropane		10.5	ug/L	1.0	105	75	127			
cis-1,3-Dichloropropene		9.20	ug/L	1.0	92	73	124			
trans-1,3-Dichloropropene		8.16	ug/L	1.0	82	72	127			
Ethylbenzene		10.5	ug/L	1.0	93	74	125			
2-Hexanone		90.4	ug/L	40	90	70	128			
Iodomethane		9.76	ug/L	1.0	98	52	130			
Methyl ethyl ketone		83.2	ug/L	40	83	56	141			
Methyl isobutyl ketone		94.4	ug/L	40	94	71	121			
Methylene chloride		8.24	ug/L	1.0	82	61	125			
Styrene		11.3	ug/L	1.0	94	75	120			
1,1,1,2-Tetrachloroethane		9.20	ug/L	1.0	92	76	122			
1,1,2,2-Tetrachloroethane		9.60	ug/L	1.0	96	67	124			
Tetrachloroethene		9.92	ug/L	1.0	99	75	126			
Toluene		9.28	ug/L	1.0	93	73	122			
1,1,1-Trichloroethane		10.4	ug/L	1.0	104	76	124			
1,1,2-Trichloroethane		9.60	ug/L	1.0	96	72	125			
Trichloroethene		9.60	ug/L	1.0	96	72	126			
Trichlorofluoromethane		11.1	ug/L	1.0	111	73	131			
1,2,3-Trichloropropane		9.84	ug/L	1.0	98	58	142			
Vinyl acetate		8.64	ug/L	1.0	86	47	154			
Vinyl chloride		11.3	ug/L	1.0	109	69	129			
m+p-Xylenes		18.7	ug/L	1.0	94	72	124			
o-Xylene		9.60	ug/L	1.0	96	74	123			
Xylenes, Total		28.3	ug/L	2.0	94	72	124			
Surr: 1,2-Dichloroethane-d4				2.0	87	69	131			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92461
Sample ID: H13100494-003CMS	54	Sample Matrix Spike				Run: 1SATURN_131031A				10/31/13 22:51
Surr: Dibromofluoromethane				2.0	95	70	125			
Surr: p-Bromofluorobenzene				2.0	116	76	123			
Surr: Toluene-d8				2.0	88	80	119			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										
Sample ID: H13100494-003CMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_131031A				10/31/13 23:22
trans-1,4-Dichloro-2-butene		11.1	ug/L	1.0	111	67	132	16	20	
Acetone		86.4	ug/L	40	86	55	144	4.7	20	
Acrylonitrile		90.4	ug/L	40	90	63	134	2.7	20	
Benzene		10.4	ug/L	1.0	99	69	129	0.8	20	
Bromochloromethane		8.96	ug/L	1.0	90	72	125	0.9	20	
Bromodichloromethane		9.44	ug/L	1.0	94	71	122	0.9	20	
Bromoform		9.76	ug/L	1.0	98	65	130	6.8	20	
Bromomethane		12.0	ug/L	1.0	120	60	136	2.0	20	
Carbon disulfide		11.0	ug/L	1.0	110	71	135	3.7	20	
Carbon tetrachloride		10.1	ug/L	1.0	101	77	121	2.4	20	
Chlorobenzene		10.2	ug/L	1.0	102	78	120	3.2	20	
Chlorodibromomethane		8.24	ug/L	1.0	82	70	122	1.0	20	
Chloroethane		10.8	ug/L	1.0	108	62	135	3.6	20	
Chloroform		9.28	ug/L	1.0	93	71	121	1.7	20	
Chloromethane		11.3	ug/L	1.0	113	66	139	4.2	20	
1,2-Dibromo-3-chloropropane		10.1	ug/L	1.0	101	59	130	24	20	R
1,2-Dibromoethane		8.16	ug/L	1.0	82	60	137	3.4	20	
Dibromomethane		8.96	ug/L	1.0	90	69	122	2.7	20	
1,2-Dichlorobenzene		10.6	ug/L	1.0	106	74	122	16	20	
1,4-Dichlorobenzene		10.4	ug/L	1.0	104	75	122	11	20	
Dichlorodifluoromethane		9.60	ug/L	1.0	96	57	144	8.0	20	
1,1-Dichloroethane		10.7	ug/L	1.0	107	76	125	3.8	20	
1,2-Dichloroethane		8.64	ug/L	1.0	86	69	131	3.8	20	
1,1-Dichloroethene		11.2	ug/L	1.0	112	67	129	2.2	20	
cis-1,2-Dichloroethene		20.9	ug/L	1.0	82	75	122	2.3	20	
trans-1,2-Dichloroethene		10.8	ug/L	1.0	108	75	124	5.3	20	
1,2-Dichloropropane		10.4	ug/L	1.0	104	75	127	0.8	20	
cis-1,3-Dichloropropene		9.36	ug/L	1.0	94	73	124	1.7	20	
trans-1,3-Dichloropropene		8.72	ug/L	1.0	87	72	127	6.6	20	
Ethylbenzene		10.2	ug/L	1.0	91	74	125	2.3	20	
2-Hexanone		87.2	ug/L	40	87	70	128	3.6	20	
Iodomethane		10.6	ug/L	1.0	106	52	130	7.9	20	
Methyl ethyl ketone		82.4	ug/L	40	82	56	141	1.0	20	
Methyl isobutyl ketone		99.2	ug/L	40	99	71	121	5.0	20	
Methylene chloride		8.96	ug/L	1.0	90	61	125	8.4	20	
Styrene		11.0	ug/L	1.0	92	75	120	2.2	20	
1,1,1,2-Tetrachloroethane		9.20	ug/L	1.0	92	76	122	0.0	20	
1,1,2,2-Tetrachloroethane		10.1	ug/L	1.0	101	67	124	4.9	20	
Tetrachloroethene		9.76	ug/L	1.0	98	75	126	1.6	20	

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92461
Sample ID: H13100494-003CMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_131031A				10/31/13 23:22
Toluene		9.52	ug/L	1.0	95	73	122	2.6	20	
1,1,1-Trichloroethane		10.2	ug/L	1.0	102	76	124	2.3	20	
1,1,2-Trichloroethane		9.76	ug/L	1.0	98	72	125	1.7	20	
Trichloroethene		9.76	ug/L	1.0	98	72	126	1.7	20	
Trichlorofluoromethane		10.9	ug/L	1.0	109	73	131	2.2	20	
1,2,3-Trichloropropane		10.6	ug/L	1.0	106	58	142	7.1	20	
Vinyl acetate		8.96	ug/L	1.0	90	47	154	3.6	20	
Vinyl chloride		10.8	ug/L	1.0	104	69	129	4.3	20	
m+p-Xylenes		18.3	ug/L	1.0	92	72	124	2.2	20	
o-Xylene		9.44	ug/L	1.0	94	74	123	1.7	20	
Xylenes, Total		27.8	ug/L	2.0	93	72	124	2.0	20	
Surr: 1,2-Dichloroethane-d4				2.0	89	69	131			
Surr: Dibromofluoromethane				2.0	96	70	125			
Surr: p-Bromofluorobenzene				2.0	113	76	123			
Surr: Toluene-d8				2.0	90	80	119			

- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R92526
Sample ID: 110413_CCV_3	54	Continuing Calibration Verification Standard								11/04/13 08:54
trans-1,4-Dichloro-2-butene		5.92	ug/L	1.0	118	70	130			
Acetone		48.0	ug/L	20	96	70	130			
Acrylonitrile		38.3	ug/L	20	77	70	130			
Benzene		5.24	ug/L	1.0	105	70	130			
Bromochloromethane		4.68	ug/L	1.0	94	70	130			
Bromodichloromethane		4.68	ug/L	1.0	94	70	130			
Bromoform		5.36	ug/L	1.0	107	70	130			
Bromomethane		4.72	ug/L	1.0	94	70	130			
Carbon disulfide		5.68	ug/L	1.0	114	70	130			
Carbon tetrachloride		5.72	ug/L	1.0	114	70	130			
Chlorobenzene		4.96	ug/L	1.0	99	70	130			
Chlorodibromomethane		4.48	ug/L	1.0	90	70	130			
Chloroethane		5.64	ug/L	1.0	113	70	130			
Chloroform		5.00	ug/L	1.0	100	80	120			
Chloromethane		6.00	ug/L	1.0	120	70	130			
1,2-Dibromo-3-chloropropane		3.58	ug/L	1.0	72	70	130			
1,2-Dibromoethane		4.20	ug/L	1.0	84	70	130			
Dibromomethane		4.16	ug/L	1.0	83	70	130			
1,2-Dichlorobenzene		4.80	ug/L	1.0	96	70	130			
1,4-Dichlorobenzene		5.24	ug/L	1.0	105	70	130			
Dichlorodifluoromethane		5.40	ug/L	1.0	108	70	130			
1,1-Dichloroethane		5.72	ug/L	1.0	114	70	130			
1,2-Dichloroethane		4.20	ug/L	1.0	84	70	130			
1,1-Dichloroethene		5.72	ug/L	1.0	114	80	120			
cis-1,2-Dichloroethene		5.44	ug/L	1.0	109	70	130			
trans-1,2-Dichloroethene		5.84	ug/L	1.0	117	70	130			
1,2-Dichloropropane		4.96	ug/L	1.0	99	80	120			
cis-1,3-Dichloropropene		4.76	ug/L	1.0	95	70	130			
trans-1,3-Dichloropropene		4.40	ug/L	1.0	88	70	130			
Ethylbenzene		4.80	ug/L	1.0	96	80	120			
2-Hexanone		42.4	ug/L	20	85	70	130			
Iodomethane		5.24	ug/L	1.0	105	70	130			
Methyl ethyl ketone		43.2	ug/L	20	86	70	130			
Methyl isobutyl ketone		45.2	ug/L	20	90	70	130			
Methylene chloride		4.36	ug/L	1.0	87	70	130			
Styrene		4.84	ug/L	1.0	97	70	130			
1,1,1,2-Tetrachloroethane		4.60	ug/L	1.0	92	70	130			
1,1,2,2-Tetrachloroethane		5.20	ug/L	1.0	104	70	130			
Tetrachloroethene		5.28	ug/L	1.0	106	70	130			
Toluene		4.92	ug/L	1.0	98	80	120			
1,1,1-Trichloroethane		5.52	ug/L	1.0	110	70	130			
1,1,2-Trichloroethane		4.88	ug/L	1.0	98	70	130			
Trichloroethene		5.16	ug/L	1.0	103	70	130			
Trichlorofluoromethane		5.52	ug/L	1.0	110	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R92526
Sample ID: 110413_CCV_3	54	Continuing Calibration Verification Standard								11/04/13 08:54
1,2,3-Trichloropropane		5.28	ug/L	1.0	106	70	130			
Vinyl acetate		4.56	ug/L	1.0	91	70	130			
Vinyl chloride		5.36	ug/L	1.0	107	80	120			
m+p-Xylenes		9.52	ug/L	1.0	95	70	130			
o-Xylene		5.08	ug/L	1.0	102	70	130			
Xylenes, Total		14.6	ug/L	1.0	97	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	90	69	131			
Surr: Dibromofluoromethane				1.0	102	70	125			
Surr: p-Bromofluorobenzene				1.0	122	76	123			
Surr: Toluene-d8				1.0	92	80	119			
Method: SW8260B										Batch: R92526
Sample ID: 110413_LCS_4	54	Laboratory Control Sample				Run: 1SATURN_131104A				11/04/13 10:10
trans-1,4-Dichloro-2-butene		5.56	ug/L	1.0	111	67	132			
Acetone		56.0	ug/L	20	112	55	144			
Acrylonitrile		44.0	ug/L	20	88	63	134			
Benzene		4.92	ug/L	1.0	98	69	129			
Bromochloromethane		4.36	ug/L	1.0	87	72	125			
Bromodichloromethane		4.44	ug/L	1.0	89	71	122			
Bromoform		4.96	ug/L	1.0	99	65	130			
Bromomethane		4.92	ug/L	1.0	98	60	136			
Carbon disulfide		5.60	ug/L	1.0	112	71	135			
Carbon tetrachloride		5.20	ug/L	1.0	104	77	121			
Chlorobenzene		4.44	ug/L	1.0	89	78	120			
Chlorodibromomethane		4.32	ug/L	1.0	86	70	122			
Chloroethane		5.56	ug/L	1.0	111	62	135			
Chloroform		4.72	ug/L	1.0	94	71	121			
Chloromethane		6.04	ug/L	1.0	121	66	139			
1,2-Dibromo-3-chloropropane		4.20	ug/L	1.0	84	59	130			
1,2-Dibromoethane		3.72	ug/L	1.0	74	60	137			
Dibromomethane		3.92	ug/L	1.0	78	69	122			
1,2-Dichlorobenzene		4.56	ug/L	1.0	91	74	122			
1,4-Dichlorobenzene		5.20	ug/L	1.0	104	75	122			
Dichlorodifluoromethane		5.36	ug/L	1.0	107	57	144			
1,1-Dichloroethane		5.08	ug/L	1.0	102	76	125			
1,2-Dichloroethane		4.00	ug/L	1.0	80	69	131			
1,1-Dichloroethene		5.24	ug/L	1.0	105	67	129			
cis-1,2-Dichloroethene		5.12	ug/L	1.0	102	75	122			
trans-1,2-Dichloroethene		5.60	ug/L	1.0	112	75	124			
1,2-Dichloropropane		4.68	ug/L	1.0	94	75	127			
cis-1,3-Dichloropropene		4.80	ug/L	1.0	96	73	124			
trans-1,3-Dichloropropene		4.20	ug/L	1.0	84	72	127			
Ethylbenzene		4.72	ug/L	1.0	94	74	125			
2-Hexanone		42.8	ug/L	20	86	70	128			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92526
Sample ID: 110413_LCS_4	54	Laboratory Control Sample				Run: 1SATURN_131104A				11/04/13 10:10
Iodomethane		3.56	ug/L	1.0	71	52	130			
Methyl ethyl ketone		37.0	ug/L	20	74	56	141			
Methyl isobutyl ketone		44.8	ug/L	20	90	71	121			
Methylene chloride		4.08	ug/L	1.0	82	61	125			
Styrene		4.60	ug/L	1.0	92	75	120			
1,1,1,2-Tetrachloroethane		4.16	ug/L	1.0	83	76	122			
1,1,2,2-Tetrachloroethane		4.64	ug/L	1.0	93	67	124			
Tetrachloroethene		4.84	ug/L	1.0	97	75	126			
Toluene		4.88	ug/L	1.0	98	73	122			
1,1,1-Trichloroethane		5.16	ug/L	1.0	103	76	124			
1,1,2-Trichloroethane		4.52	ug/L	1.0	90	72	125			
Trichloroethene		4.80	ug/L	1.0	96	72	126			
Trichlorofluoromethane		5.68	ug/L	1.0	114	73	131			
1,2,3-Trichloropropane		4.68	ug/L	1.0	94	58	142			
Vinyl acetate		4.48	ug/L	1.0	90	47	154			
Vinyl chloride		5.88	ug/L	1.0	118	69	129			
m+p-Xylenes		8.84	ug/L	1.0	88	72	124			
o-Xylene		4.48	ug/L	1.0	90	74	123			
Xylenes, Total		13.3	ug/L	1.0	89	72	124			
Surr: 1,2-Dichloroethane-d4				1.0	85	69	131			
Surr: Dibromofluoromethane				1.0	95	70	125			
Surr: p-Bromofluorobenzene				1.0	126	76	123			S
Surr: Toluene-d8				1.0	90	80	119			
Sample ID: 110413_MBLK_6	54	Method Blank				Run: 1SATURN_131104A				11/04/13 12:05
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92526
Sample ID: 110413_MBLK_6	54	Method Blank				Run: 1SATURN_131104A				11/04/13 12:05
1,4-Dichlorobenzene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	84	69	131			
Surr: Dibromofluoromethane				1.0	108	70	125			
Surr: p-Bromofluorobenzene				1.0	114	76	123			
Surr: Toluene-d8				1.0	78	80	119			S
Sample ID: 110513_LCS_3	54	Laboratory Control Sample				Run: 1SATURN_131104A				11/05/13 09:24
trans-1,4-Dichloro-2-butene		6.00	ug/L	1.0	120	67	132			
Acetone		45.2	ug/L	20	90	55	144			
Acrylonitrile		42.0	ug/L	20	84	63	134			
Benzene		4.68	ug/L	1.0	94	69	129			
Bromochloromethane		4.00	ug/L	1.0	80	72	125			
Bromodichloromethane		4.20	ug/L	1.0	84	71	122			
Bromoform		4.88	ug/L	1.0	98	65	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92526
Sample ID: 110513_LCS_3	54	Laboratory Control Sample				Run: 1SATURN_131104A				11/05/13 09:24
Bromomethane		5.92	ug/L	1.0	118	60	136			
Carbon disulfide		5.20	ug/L	1.0	104	71	135			
Carbon tetrachloride		4.72	ug/L	1.0	94	77	121			
Chlorobenzene		4.56	ug/L	1.0	91	78	120			
Chlorodibromomethane		4.00	ug/L	1.0	80	70	122			
Chloroethane		5.88	ug/L	1.0	118	62	135			
Chloroform		4.44	ug/L	1.0	89	71	121			
Chloromethane		5.72	ug/L	1.0	114	66	139			
1,2-Dibromo-3-chloropropane		3.74	ug/L	1.0	75	59	130			
1,2-Dibromoethane		3.56	ug/L	1.0	71	60	137			
Dibromomethane		3.76	ug/L	1.0	75	69	122			
1,2-Dichlorobenzene		4.36	ug/L	1.0	87	74	122			
1,4-Dichlorobenzene		5.04	ug/L	1.0	101	75	122			
Dichlorodifluoromethane		4.92	ug/L	1.0	98	57	144			
1,1-Dichloroethane		4.60	ug/L	1.0	92	76	125			
1,2-Dichloroethane		3.67	ug/L	1.0	73	69	131			
1,1-Dichloroethene		4.92	ug/L	1.0	98	67	129			
cis-1,2-Dichloroethene		4.76	ug/L	1.0	95	75	122			
trans-1,2-Dichloroethene		5.24	ug/L	1.0	105	75	124			
1,2-Dichloropropane		4.32	ug/L	1.0	86	75	127			
cis-1,3-Dichloropropene		4.36	ug/L	1.0	87	73	124			
trans-1,3-Dichloropropene		3.94	ug/L	1.0	79	72	127			
Ethylbenzene		4.44	ug/L	1.0	89	74	125			
2-Hexanone		40.0	ug/L	20	80	70	128			
Iodomethane		3.31	ug/L	1.0	66	52	130			
Methyl ethyl ketone		35.6	ug/L	20	71	56	141			
Methyl isobutyl ketone		42.8	ug/L	20	86	71	121			
Methylene chloride		3.78	ug/L	1.0	76	61	125			
Styrene		4.40	ug/L	1.0	88	75	120			
1,1,1,2-Tetrachloroethane		4.16	ug/L	1.0	83	76	122			
1,1,2,2-Tetrachloroethane		4.88	ug/L	1.0	98	67	124			
Tetrachloroethene		4.56	ug/L	1.0	91	75	126			
Toluene		4.48	ug/L	1.0	90	73	122			
1,1,1-Trichloroethane		4.92	ug/L	1.0	98	76	124			
1,1,2-Trichloroethane		4.56	ug/L	1.0	91	72	125			
Trichloroethene		4.52	ug/L	1.0	90	72	126			
Trichlorofluoromethane		5.32	ug/L	1.0	106	73	131			
1,2,3-Trichloropropane		5.32	ug/L	1.0	106	58	142			
Vinyl acetate		4.60	ug/L	1.0	92	47	154			
Vinyl chloride		5.20	ug/L	1.0	104	69	129			
m+p-Xylenes		8.44	ug/L	1.0	84	72	124			
o-Xylene		4.32	ug/L	1.0	86	74	123			
Xylenes, Total		12.8	ug/L	1.0	85	72	124			
Surr: 1,2-Dichloroethane-d4				1.0	83	69	131			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92526
Sample ID: 110513_LCS_3	54	Laboratory Control Sample				Run: 1SATURN_131104A				11/05/13 09:24
Surr: Dibromofluoromethane				1.0	97	70	125			
Surr: p-Bromofluorobenzene				1.0	124	76	123			S
Surr: Toluene-d8				1.0	89	80	119			
Sample ID: H13100494-005CMS	54	Sample Matrix Spike				Run: 1SATURN_131104A				11/05/13 09:54
trans-1,4-Dichloro-2-butene		11.4	ug/L	1.0	114	67	132			
Acetone		67.3	ug/L	40	67	55	144			
Acrylonitrile		73.4	ug/L	40	73	63	134			
Benzene		9.60	ug/L	1.0	96	69	129			
Bromochloromethane		8.24	ug/L	1.0	82	72	125			
Bromodichloromethane		8.40	ug/L	1.0	84	71	122			
Bromoform		9.60	ug/L	1.0	96	65	130			
Bromomethane		12.5	ug/L	1.0	125	60	136			
Carbon disulfide		11.0	ug/L	1.0	110	71	135			
Carbon tetrachloride		9.76	ug/L	1.0	98	77	121			
Chlorobenzene		8.96	ug/L	1.0	90	78	120			
Chlorodibromomethane		7.94	ug/L	1.0	79	70	122			
Chloroethane		10.6	ug/L	1.0	106	62	135			
Chloroform		8.96	ug/L	1.0	90	71	121			
Chloromethane		11.8	ug/L	1.0	118	66	139			
1,2-Dibromo-3-chloropropane		8.08	ug/L	1.0	81	59	130			
1,2-Dibromoethane		7.38	ug/L	1.0	74	60	137			
Dibromomethane		7.46	ug/L	1.0	75	69	122			
1,2-Dichlorobenzene		8.64	ug/L	1.0	86	74	122			
1,4-Dichlorobenzene		10.6	ug/L	1.0	106	75	122			
Dichlorodifluoromethane		9.52	ug/L	1.0	95	57	144			
1,1-Dichloroethane		9.28	ug/L	1.0	93	76	125			
1,2-Dichloroethane		7.90	ug/L	1.0	79	69	131			
1,1-Dichloroethene		10.1	ug/L	1.0	101	67	129			
cis-1,2-Dichloroethene		9.92	ug/L	1.0	99	75	122			
trans-1,2-Dichloroethene		9.76	ug/L	1.0	98	75	124			
1,2-Dichloropropane		8.80	ug/L	1.0	88	75	127			
cis-1,3-Dichloropropene		8.88	ug/L	1.0	89	73	124			
trans-1,3-Dichloropropene		7.69	ug/L	1.0	77	72	127			
Ethylbenzene		8.80	ug/L	1.0	88	74	125			
2-Hexanone		79.4	ug/L	40	79	70	128			
Iodomethane		6.50	ug/L	1.0	65	52	130			
Methyl ethyl ketone		65.9	ug/L	40	66	56	141			
Methyl isobutyl ketone		79.8	ug/L	40	80	71	121			
Methylene chloride		7.78	ug/L	1.0	78	61	125			
Styrene		8.40	ug/L	1.0	84	75	120			
1,1,1,2-Tetrachloroethane		8.32	ug/L	1.0	83	76	122			
1,1,2,2-Tetrachloroethane		9.44	ug/L	1.0	94	67	124			
Tetrachloroethene		8.64	ug/L	1.0	86	75	126			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92526
Sample ID: H13100494-005CMS	54	Sample Matrix Spike				Run: 1SATURN_131104A				11/05/13 09:54
Toluene		8.56	ug/L	1.0	86	73	122			
1,1,1-Trichloroethane		9.92	ug/L	1.0	99	76	124			
1,1,2-Trichloroethane		9.12	ug/L	1.0	91	72	125			
Trichloroethene		8.80	ug/L	1.0	88	72	126			
Trichlorofluoromethane		10.6	ug/L	1.0	106	73	131			
1,2,3-Trichloropropane		8.24	ug/L	1.0	82	58	142			
Vinyl acetate		9.84	ug/L	1.0	98	47	154			
Vinyl chloride		9.28	ug/L	1.0	93	69	129			
m+p-Xylenes		17.0	ug/L	1.0	85	72	124			
o-Xylene		8.16	ug/L	1.0	82	74	123			
Xylenes, Total		25.1	ug/L	2.0	84	72	124			
Surr: 1,2-Dichloroethane-d4				2.0	85	69	131			
Surr: Dibromofluoromethane				2.0	94	70	125			
Surr: p-Bromofluorobenzene				2.0	119	76	123			
Surr: Toluene-d8				2.0	88	80	119			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										
Sample ID: H13100494-005CMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_131104A				11/05/13 10:25
trans-1,4-Dichloro-2-butene		11.6	ug/L	1.0	116	67	132	2.1	20	
Acetone		66.4	ug/L	40	66	55	144	1.3	20	
Acrylonitrile		86.4	ug/L	40	86	63	134	16	20	
Benzene		9.20	ug/L	1.0	92	69	129	4.3	20	
Bromochloromethane		8.16	ug/L	1.0	82	72	125	1.0	20	
Bromodichloromethane		8.80	ug/L	1.0	88	71	122	4.7	20	
Bromoform		8.80	ug/L	1.0	88	65	130	8.7	20	
Bromomethane		12.4	ug/L	1.0	124	60	136	0.6	20	
Carbon disulfide		11.5	ug/L	1.0	115	71	135	5.0	20	
Carbon tetrachloride		9.60	ug/L	1.0	96	77	121	1.7	20	
Chlorobenzene		8.64	ug/L	1.0	86	78	120	3.6	20	
Chlorodibromomethane		8.00	ug/L	1.0	80	70	122	0.8	20	
Chloroethane		11.7	ug/L	1.0	117	62	135	9.3	20	
Chloroform		8.56	ug/L	1.0	86	71	121	4.6	20	
Chloromethane		11.8	ug/L	1.0	118	66	139	0.7	20	
1,2-Dibromo-3-chloropropane		7.82	ug/L	1.0	78	59	130	3.3	20	
1,2-Dibromoethane		7.24	ug/L	1.0	72	60	137	1.9	20	
Dibromomethane		8.16	ug/L	1.0	82	69	122	9.0	20	
1,2-Dichlorobenzene		8.48	ug/L	1.0	85	74	122	1.9	20	
1,4-Dichlorobenzene		8.96	ug/L	1.0	90	75	122	17	20	
Dichlorodifluoromethane		9.60	ug/L	1.0	96	57	144	0.8	20	
1,1-Dichloroethane		8.88	ug/L	1.0	89	76	125	4.4	20	
1,2-Dichloroethane		7.47	ug/L	1.0	75	69	131	5.6	20	
1,1-Dichloroethene		8.96	ug/L	1.0	90	67	129	12	20	
cis-1,2-Dichloroethene		9.44	ug/L	1.0	94	75	122	5.0	20	
trans-1,2-Dichloroethene		9.44	ug/L	1.0	94	75	124	3.3	20	
1,2-Dichloropropane		8.32	ug/L	1.0	83	75	127	5.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/22/13
Work Order: H13100494

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R92526
Sample ID: H13100494-005CMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_131104A			11/05/13 10:25	
cis-1,3-Dichloropropene		9.12	ug/L	1.0	91	73	124	2.7	20	
trans-1,3-Dichloropropene		8.08	ug/L	1.0	81	72	127	5.0	20	
Ethylbenzene		8.96	ug/L	1.0	90	74	125	1.8	20	
2-Hexanone		85.6	ug/L	40	86	70	128	7.5	20	
Iodomethane		6.50	ug/L	1.0	65	52	130	0.1	20	
Methyl ethyl ketone		69.0	ug/L	40	69	56	141	4.5	20	
Methyl isobutyl ketone		79.2	ug/L	40	79	71	121	0.8	20	
Methylene chloride		7.56	ug/L	1.0	76	61	125	2.9	20	
Styrene		8.64	ug/L	1.0	86	75	120	2.8	20	
1,1,1,2-Tetrachloroethane		8.40	ug/L	1.0	84	76	122	1.0	20	
1,1,2,2-Tetrachloroethane		9.12	ug/L	1.0	91	67	124	3.4	20	
Tetrachloroethene		9.04	ug/L	1.0	90	75	126	4.5	20	
Toluene		8.88	ug/L	1.0	89	73	122	3.7	20	
1,1,1-Trichloroethane		9.36	ug/L	1.0	94	76	124	5.8	20	
1,1,2-Trichloroethane		9.28	ug/L	1.0	93	72	125	1.7	20	
Trichloroethene		9.28	ug/L	1.0	93	72	126	5.3	20	
Trichlorofluoromethane		10.6	ug/L	1.0	106	73	131	0.8	20	
1,2,3-Trichloropropane		9.44	ug/L	1.0	94	58	142	14	20	
Vinyl acetate		9.36	ug/L	1.0	94	47	154	5.0	20	
Vinyl chloride		9.84	ug/L	1.0	98	69	129	5.9	20	
m+p-Xylenes		16.6	ug/L	1.0	83	72	124	2.4	20	
o-Xylene		8.16	ug/L	1.0	82	74	123	0.0	20	
Xylenes, Total		24.6	ug/L	2.0	82	72	124	1.9	20	
Surr: 1,2-Dichloroethane-d4				2.0	88	69	131			
Surr: Dibromofluoromethane				2.0	100	70	125			
Surr: p-Bromofluorobenzene				2.0	117	76	123			
Surr: Toluene-d8				2.0	95	80	119			

- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

MT-DEQ Solid Waste Section

H13100494

Login completed by: Tracy L. Lorash

Date Received: 10/25/2013

Reviewed by: BL2000\kwiegand

Received by: TLL

Reviewed Date: 11/1/2013

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	2.7°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Collection time on COC for MW-12 and MW-12 Dup. Is 9:50 - bottles have 10:00. Logged in with time from COC. Sample ID on COC is MW-12 Dup. - ID on bottles is MW-12 Dup Logged in with ID from COC. TI 10/25/13

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: Montana DEQ - Solid Waste Section

Project Name, PWS, Permit, Etc.: Mister M Landfill

Sample Origin State: MT

EPA/State Compliance: Yes ☑ No ☐

Report Mail Address (Required): 1520 E. Sixth Ave. Helena, MT 59620

☐ No Hard Copy Email:

Contact Name: John Collins

Phone/Fax: 406 444-2802

Cell:

Sampler: (Please Print) John Collins

Invoice Contact & Phone: SAA

Purchase Order:

Quote/Bottle Order:

Invoice Address (Required): SAA

☑ No Hard Copy Email:

Special Report/Formats:

☐ DW ☐ POTW/WWTP ☐ State: ☐ Other:

☐ EDD/EDT (Electronic Data) Format: ☐ LEVEL IV ☐ NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water

ANALYSIS REQUESTED

SEE ATTACHED

Standard Turnaround (TAT)

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: *Dissolved metals not collected due to filter apparatus failure

Shipped by: Hand Delivery

Cooler ID(s): Y

Receipt Temp 2.7 °C TB

On Ice: Y N

Custody Seal On Bottle Y N; On Cooler Y N

Intact Y N

Signature Match Y N

LABORATORY USE ONLY H13100494

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	8260B	E300.0/A4500-H-B/A2510B	E353.2	6010.20									
1	mw-11	10-23-13	1330	W	✓	✓	✓	✓									
2	mw-11	10-23-13	1455	W	✓	✓	✓	*								No metals (see above)	
3	mw-01	10-23-13	1625	W	✓	✓	✓	*								"	"
4	mw-9R	10-23-13	1700	W	✓	✓	✓	*								"	"
5	mw-12	10-24-13	0950	W	✓	✓	✓	*								"	"
6	mw-12 Dup.	10-24-13	0950	W	✓	✓										"	"
7	Trip Blank			W	✓												
8																	
9																	
10																	

Custody Record MUST be Signed

Relinquished by (print): John Collins Date/Time: 10/25/13 11:37 Signature:

Relinquished by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by Laboratory: Tracy Lovell Date/Time: 10/25/13 11:37 Signature:

Sample Disposal: Return to Client: Lab Disposal:

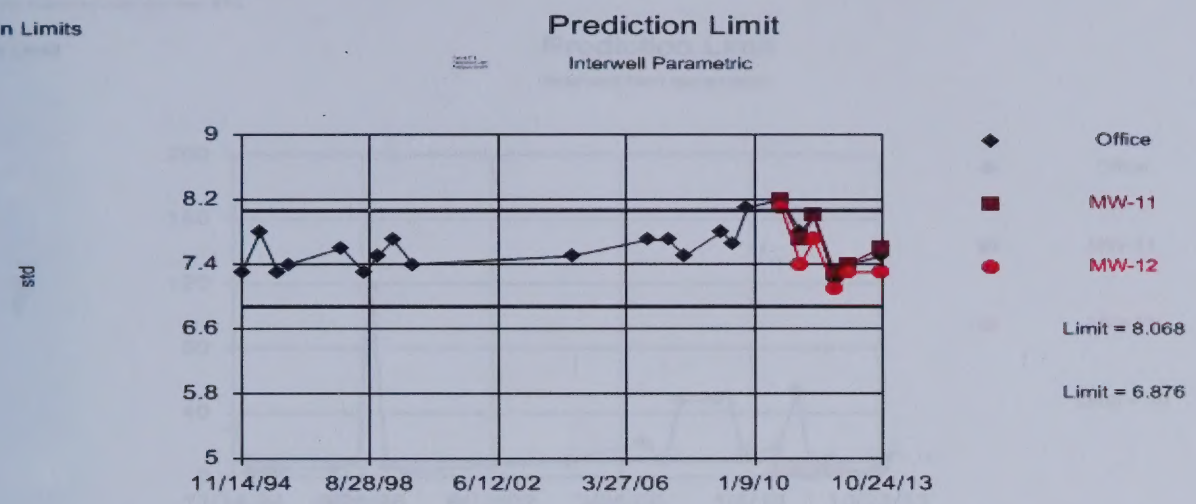
In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

APPENDIX B: RESULTS OF STATISTICAL ANALYSES

Figure F-1: Prediction Limit Analysis for pH

v.9.0.34 For regulatory purposes only. EPA

Within Limits



Background Data Summary: Mean=7.472, Std. Dev.=0.2252, n=23. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9654, critical = 0.914. Report alpha = 0.05. Individual comparison alpha = 0.008333. Most recent point for each compliance well compared to limit.

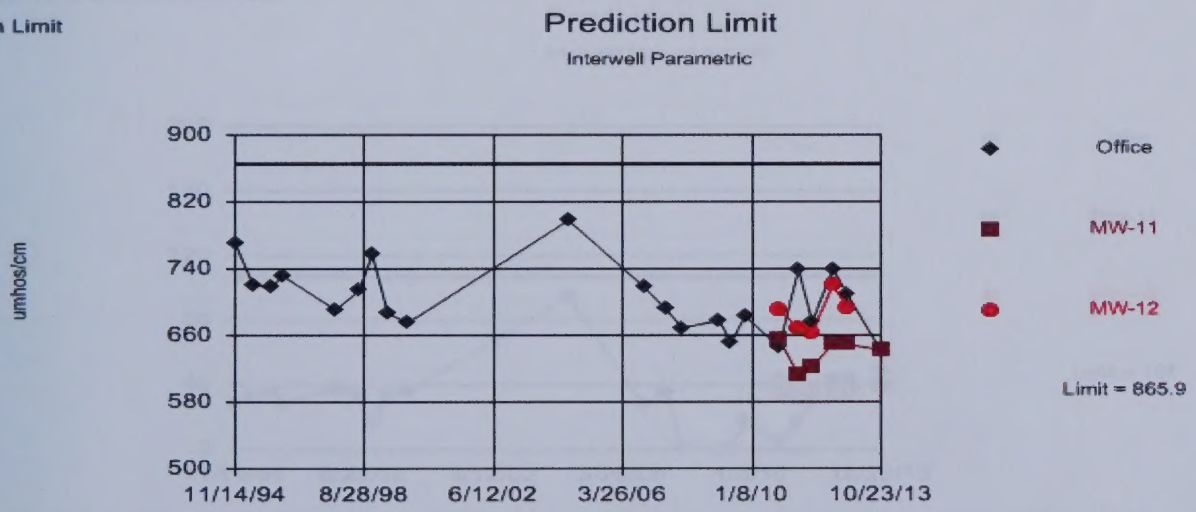
Constituent: pH Analysis Run 12/3/2013 11:02 AM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-2: Prediction Limit Analysis for Conductivity

v.9.0.34 For regulatory purposes only. EPA

Within Limit



Background Data Summary: Mean=766.6, Std. Dev.=42.82, n=23. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9616, critical = 0.914. Report alpha = 0.05. Individual comparison alpha = 0.01667. Most recent point for each compliance well compared to limit.

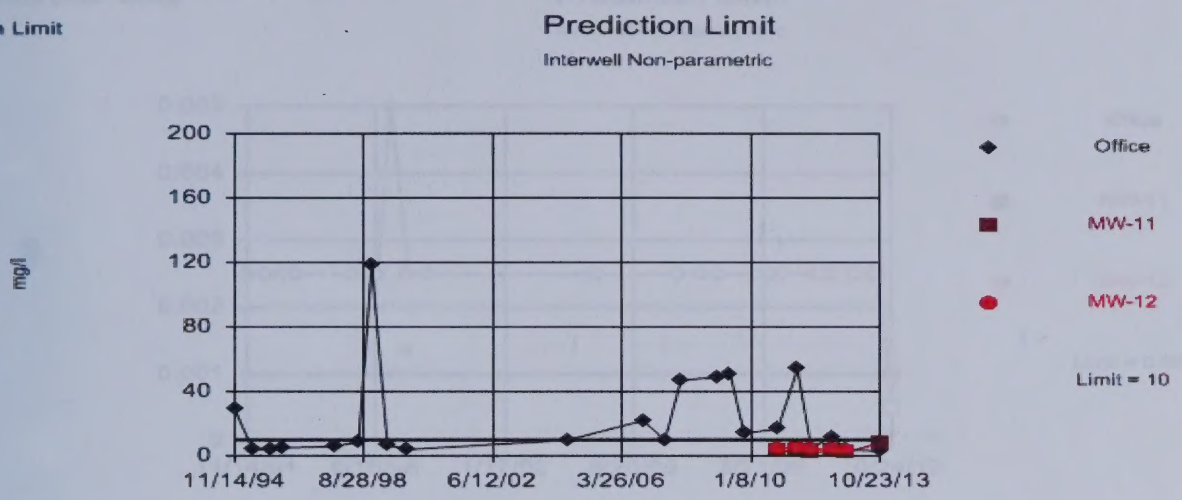
Constituent: SC Analysis Run 12/3/2013 12:31 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-3: Prediction Limit Analysis for Chloride

v.9.0.34 For regulatory purposes only. EPA

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 23 background values Report alpha = 0.1154. Individual comparison alpha = 0.04004. Most recent point for each compliance well compared to limit.

Constituent: Chloride Analysis Run 12/3/2013 12:33 PM

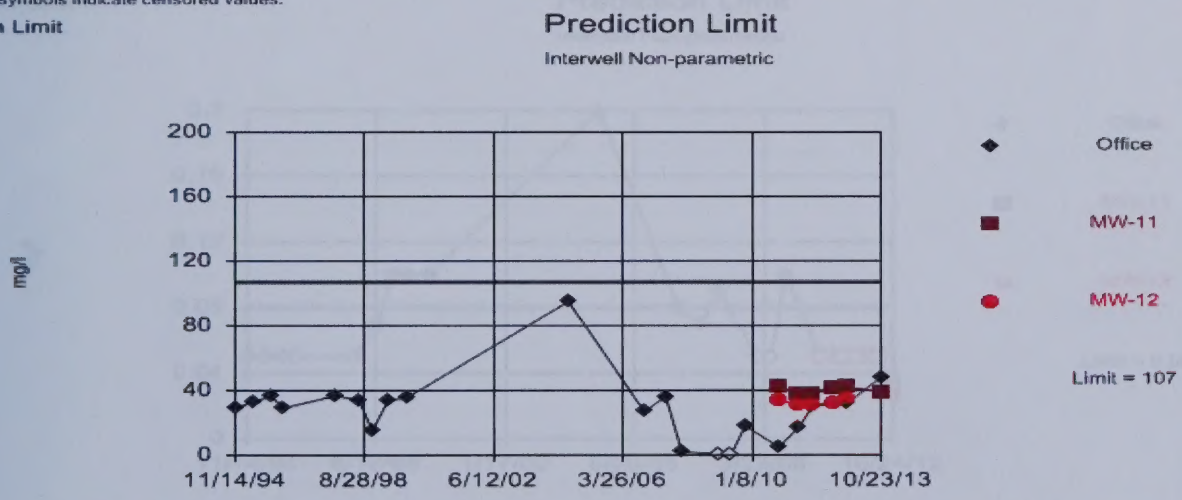
Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-4: Prediction Limit Analysis for Sulfate

v.9.0.34 For regulatory purposes only. EPA

Hollow symbols indicate censored values.

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 23 background values Report alpha = 0.1154. Individual comparison alpha = 0.04004. Most recent point for each compliance well compared to limit.

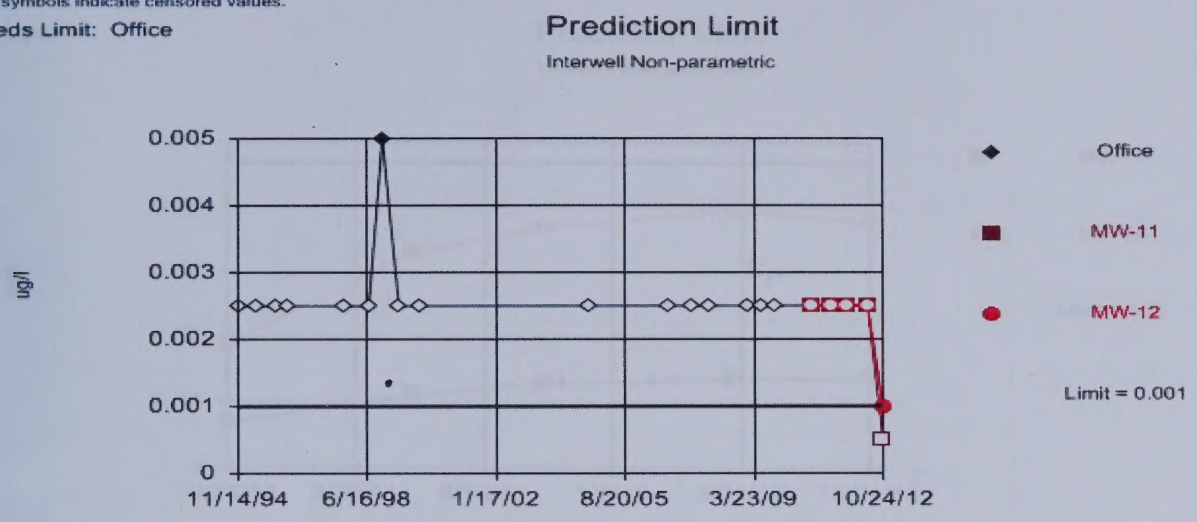
Constituent: Sulfate Analysis Run 12/3/2013 12:35 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-5: Prediction Limit Analysis for Arsenic

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

Exceeds Limit: Office



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values were censored; limit is most recent reporting limit Report alpha = 0.12. Individual comparison alpha = 0.04172. Most recent point for each compliance well compared to limit.

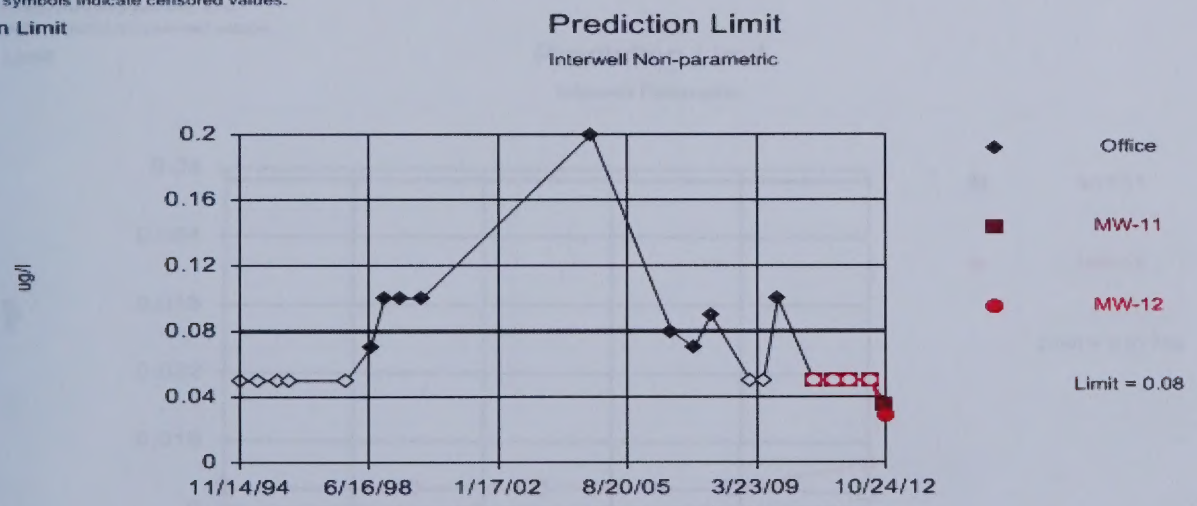
Constituent: Arsenic Analysis Run 12/3/2013 12:44 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-6: Prediction Limit Analysis for Barium

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

Within Limit



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 22 background values. 72.73% NDs Report alpha = 0.12. Individual comparison alpha = 0.04172. Most recent point for each compliance well compared to limit.

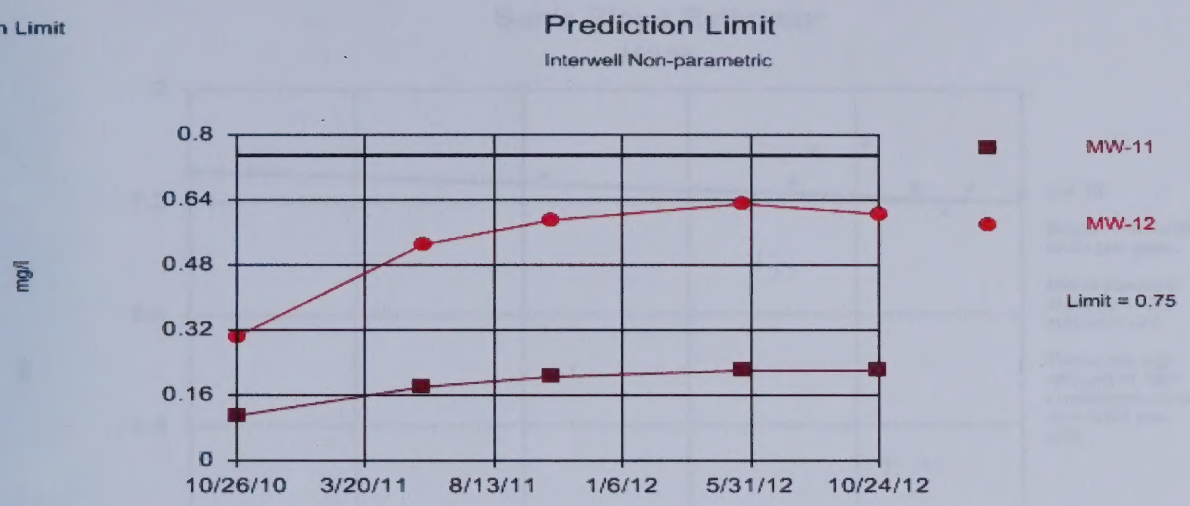
Constituent: Barium Analysis Run 12/3/2013 1:07 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-7: Prediction Limit Analysis for Iron

v.9.0.34 For regulatory purposes only. EPA

Within Limit



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 23 background values. 69.57% NDs Report alpha = 0.08. Individual comparison alpha = 0.04083. Most recent point for each compliance well compared to limit.

Constituent: Iron Analysis Run 12/3/2013 1:13 PM

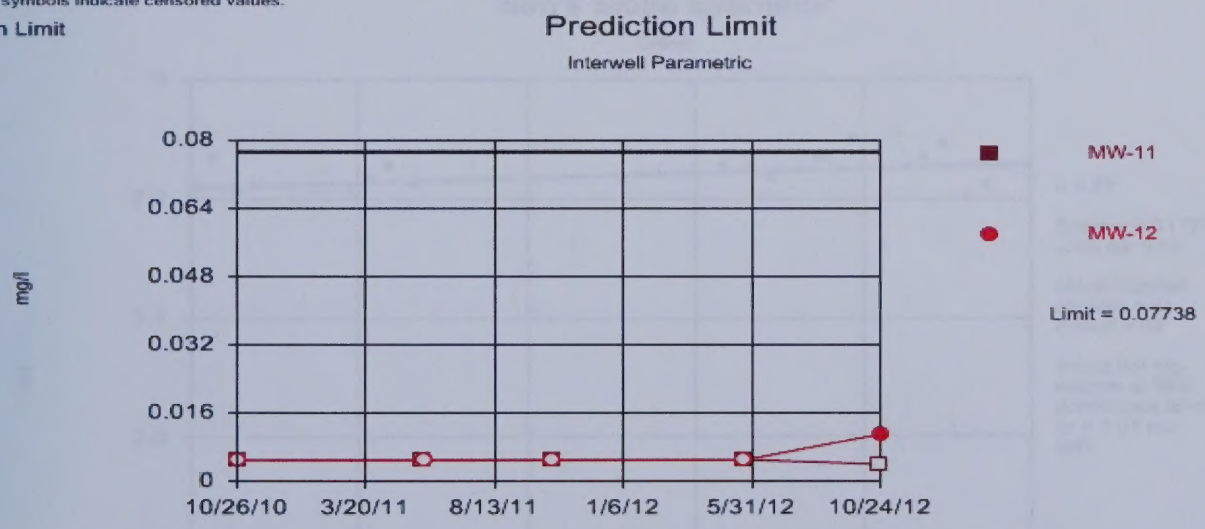
Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-8: Prediction Limit Analysis for Zinc

v.9.0.34 For regulatory purposes only. EPA

Hollow symbols indicate censored values.

Within Limit



Background Data Summary (based on square root transformation): Mean=0.171, Std. Dev.=0.05058, n=23, 4.348% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9389, critical = 0.914. Report alpha = 0.05. Individual comparison alpha = 0.025. Most recent point for each compliance well compared to limit.

Constituent: Zinc Analysis Run 12/3/2013 1:16 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-9: Trend Analysis for pH in MW-9R

v.9.0.34 For regulatory purposes only. EPA

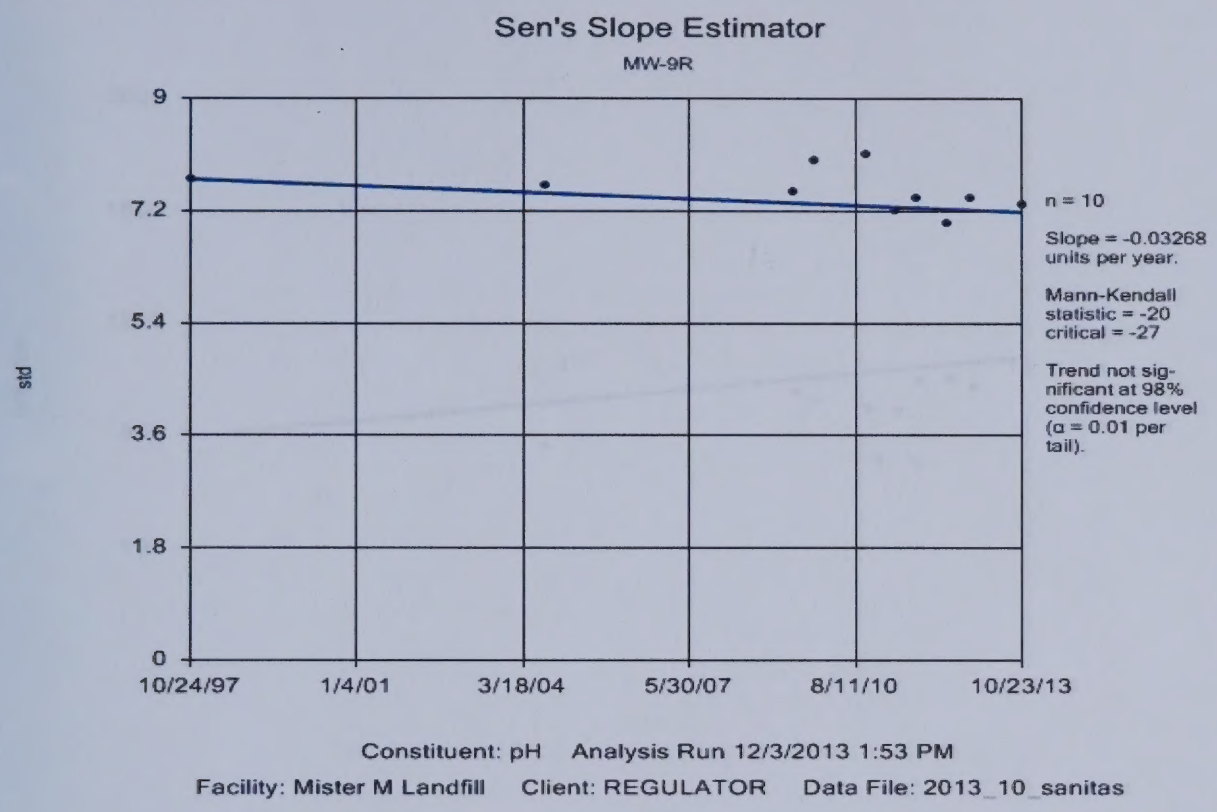


Figure F-10: Trend Analysis for pH in MW-OW

v.9.0.34 For regulatory purposes only. EPA

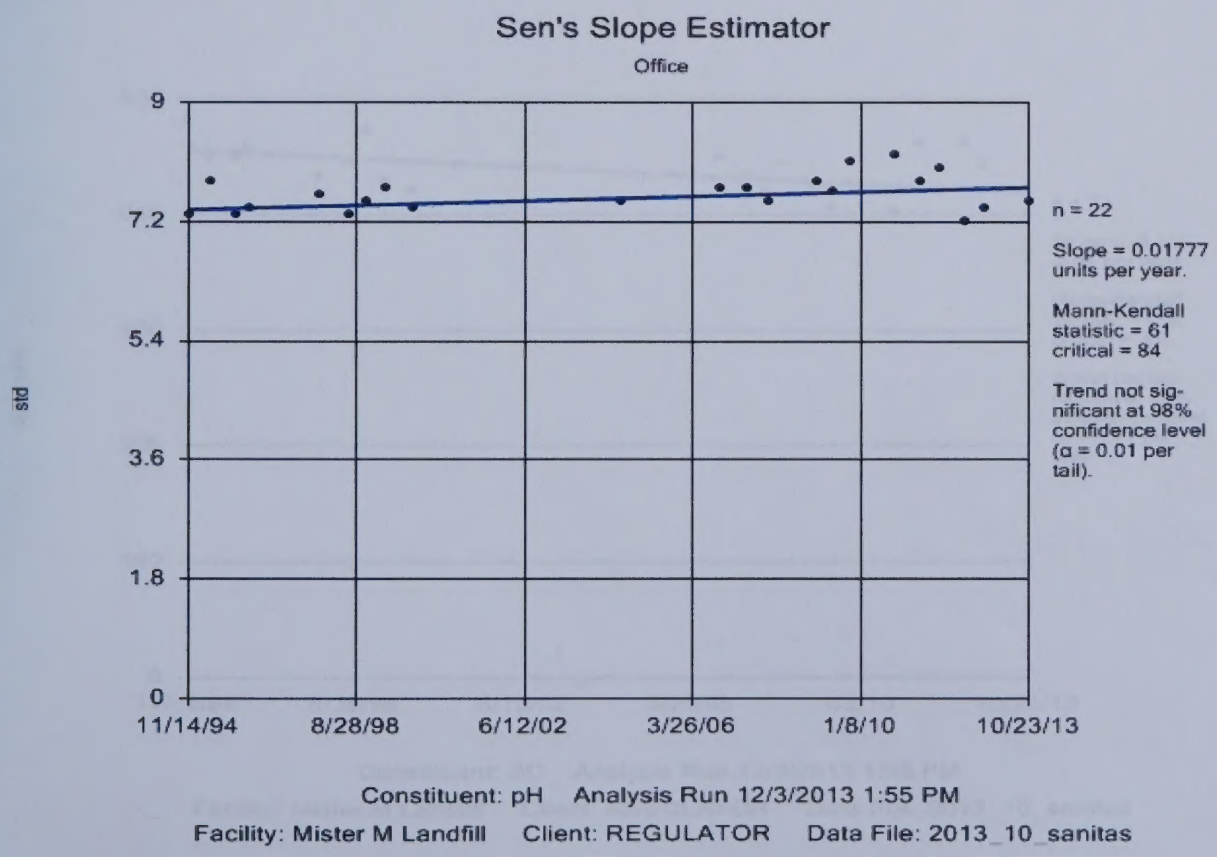


Figure F-11: Trend Analysis for Specific Conductance in MW-9R

v.9.0.34 For regulatory purposes only. EPA

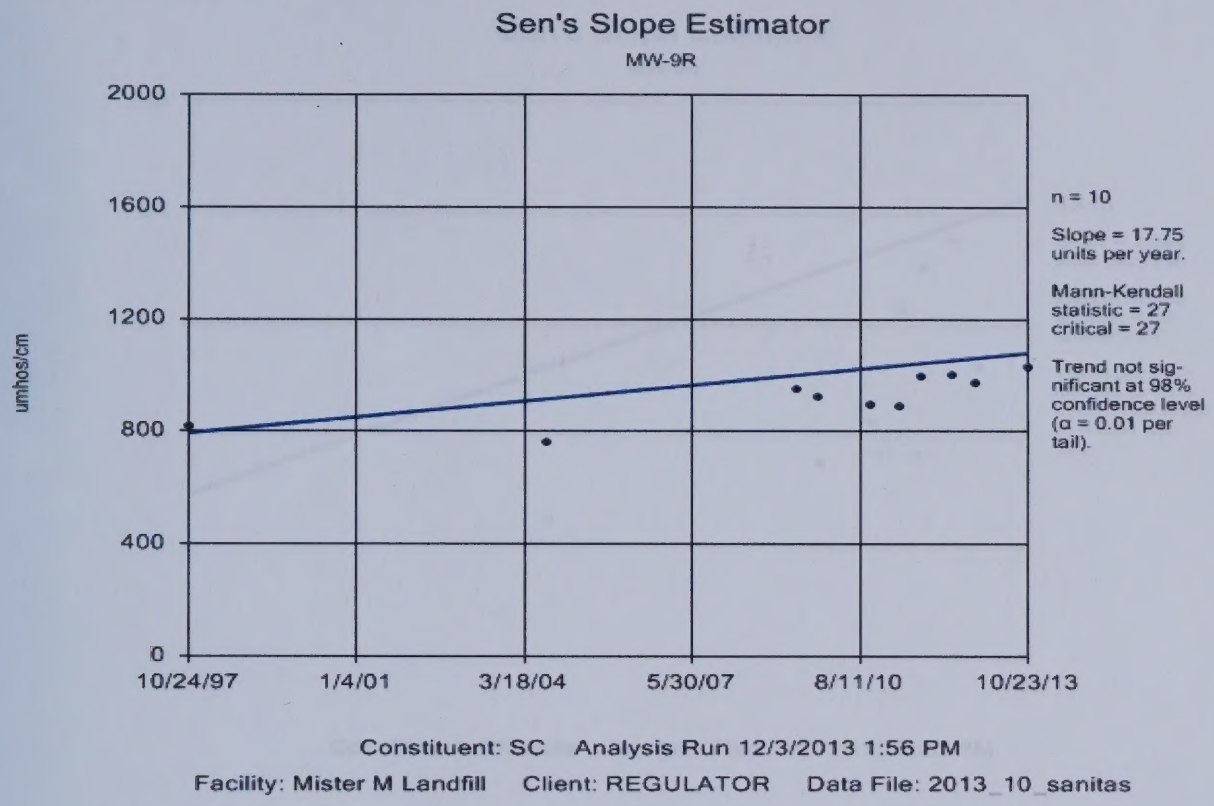


Figure F-12: Trend Analysis for Specific Conductance in MW-OW

v.9.0.34 For regulatory purposes only. EPA

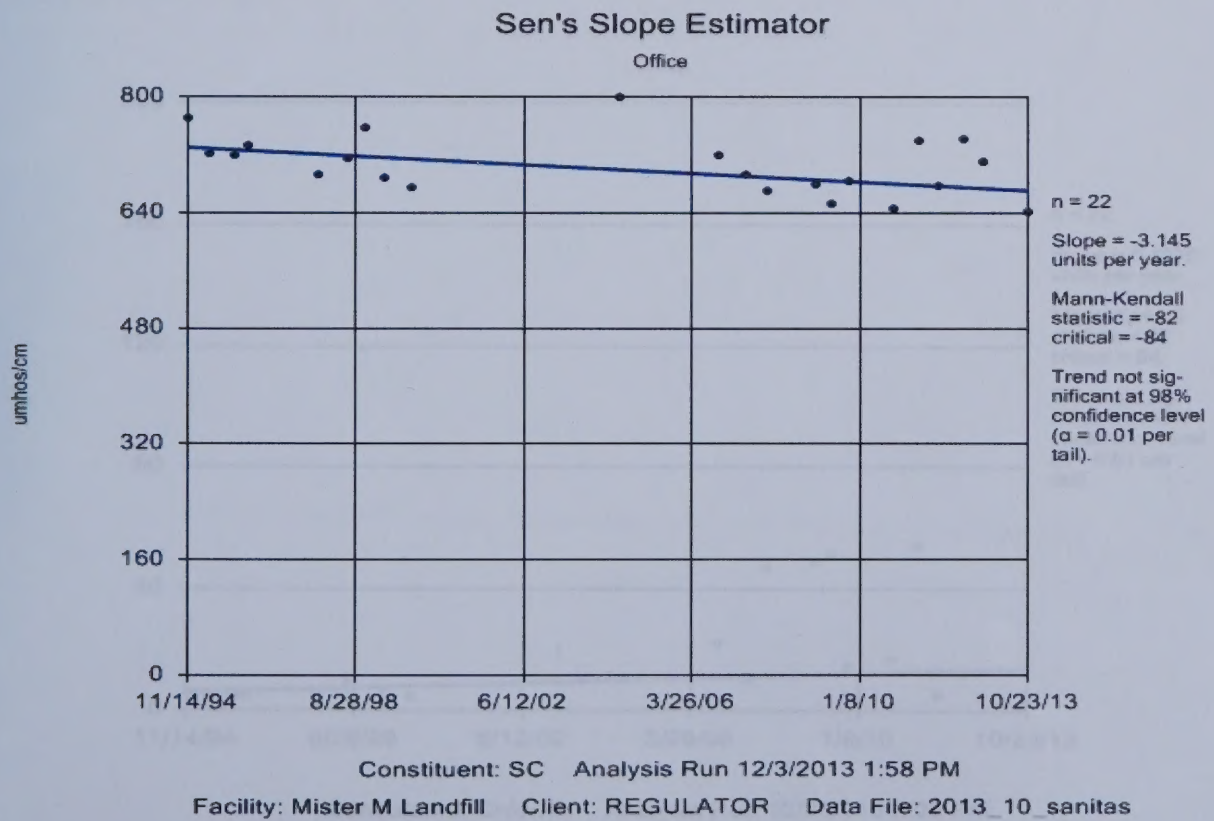
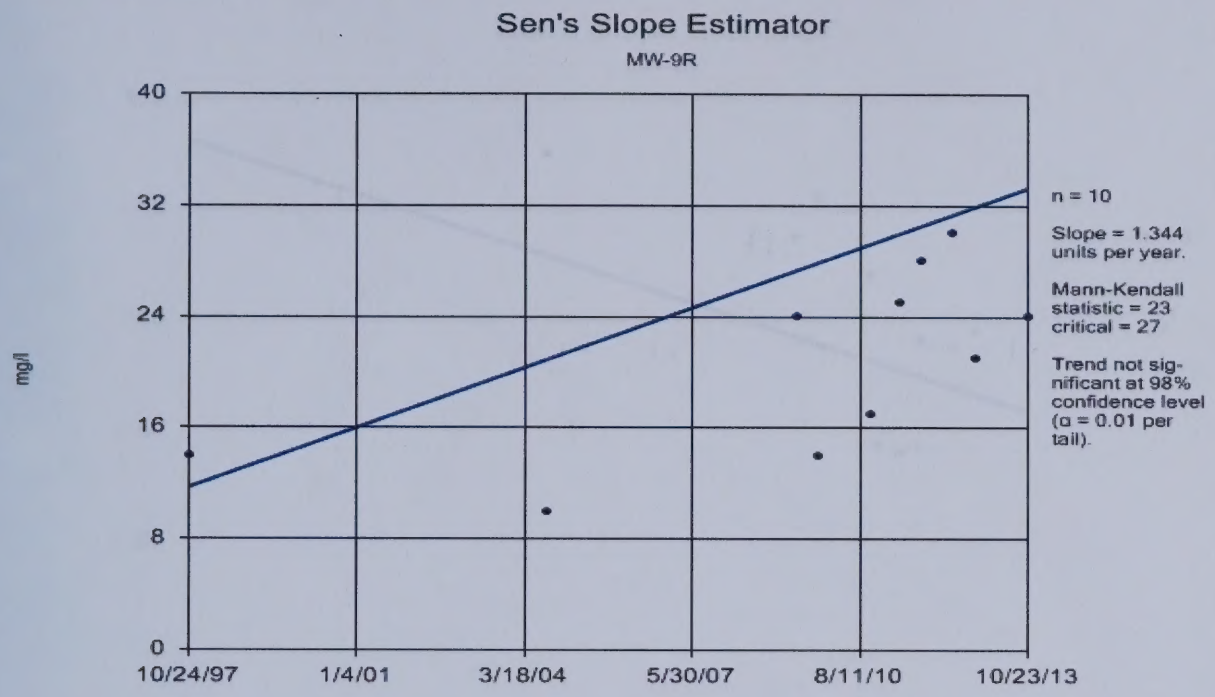


Figure F-13: Trend Analysis for Chloride in MW-9R

v.9.0.34 For regulatory purposes only. EPA

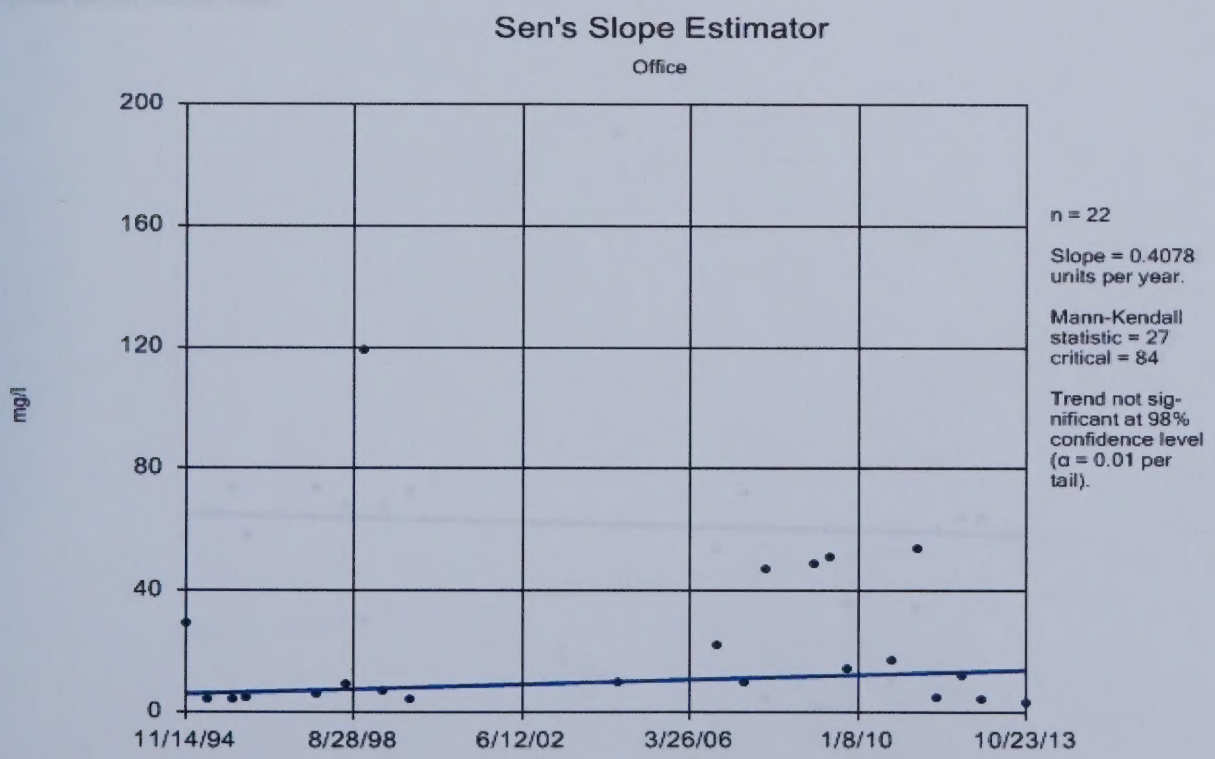


Constituent: Chloride Analysis Run 12/3/2013 2:00 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-14: Trend Analysis for Chloride in MW-OW

v.9.0.34 For regulatory purposes only. EPA

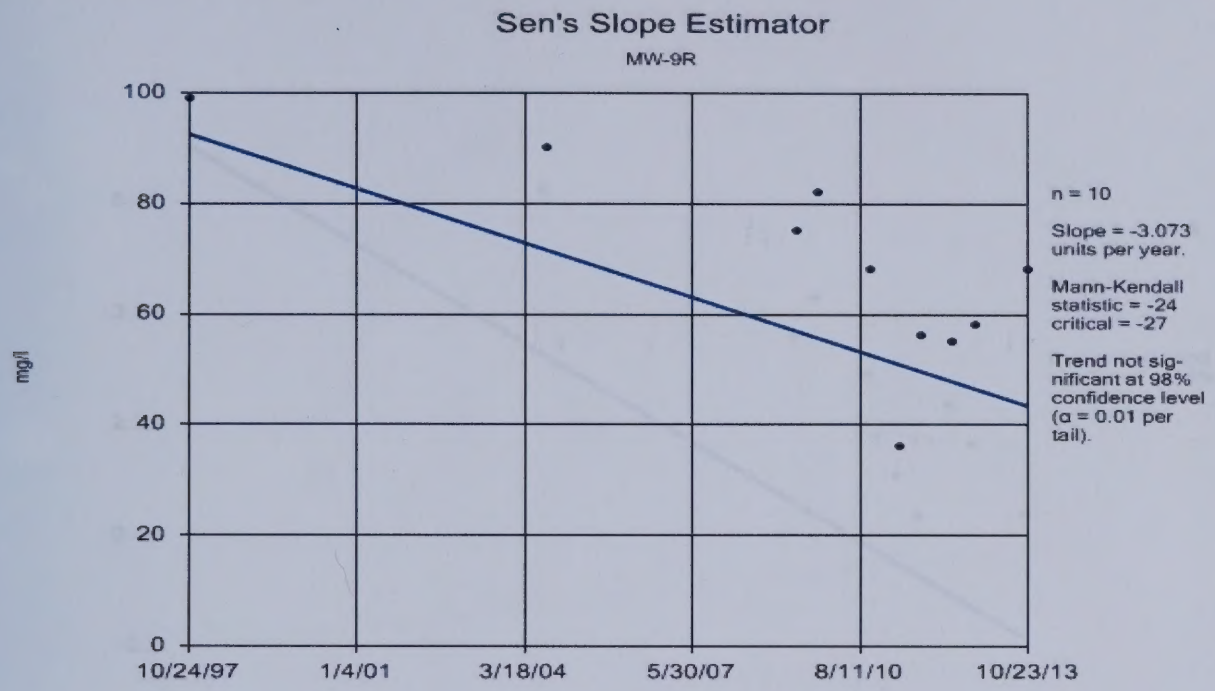


Constituent: Chloride Analysis Run 12/3/2013 2:02 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-15: Trend Analysis for Sulfate in MW-9R

v.9.0.34 For regulatory purposes only. EPA



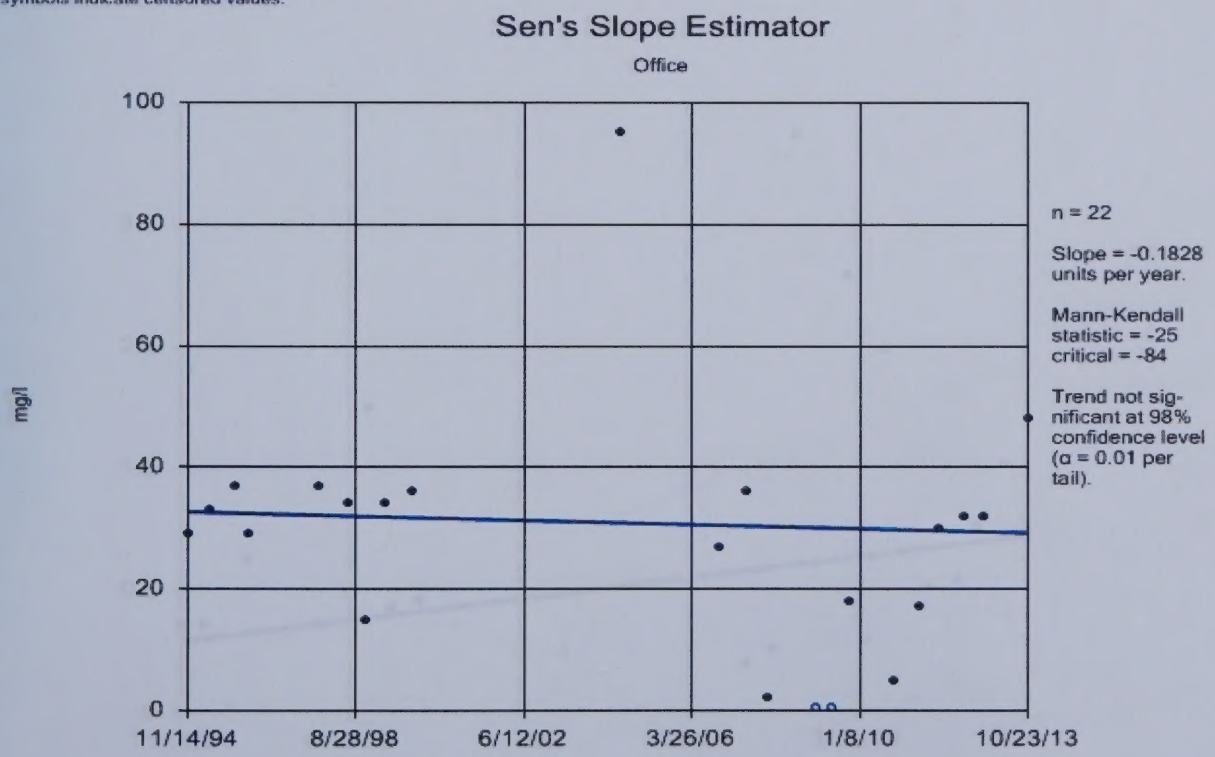
Constituent: Sulfate Analysis Run 12/3/2013 2:04 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-16: Trend Analysis for Sulfate in MW-OW

v.9.0.34 For regulatory purposes only. EPA

Hollow symbols indicate censored values.

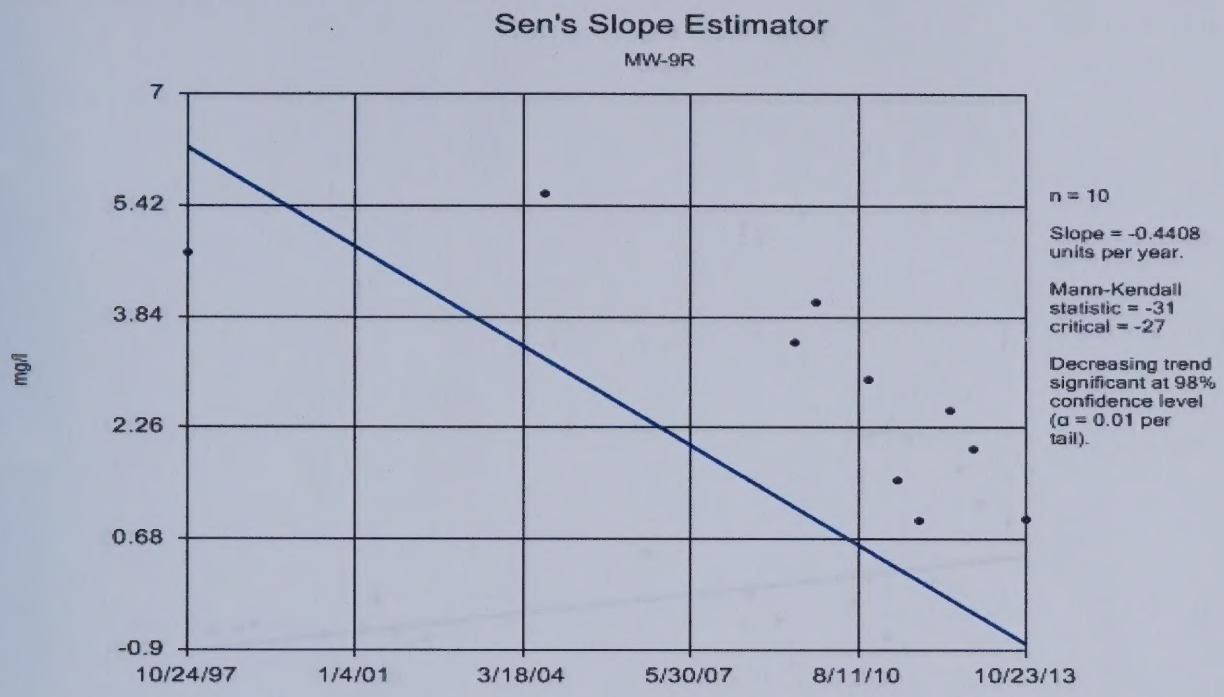


Constituent: Sulfate Analysis Run 12/3/2013 2:06 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-17: Trend Analysis for Nitrate + Nitrite in MW-9R

v.9.0.34 For regulatory purposes only. EPA



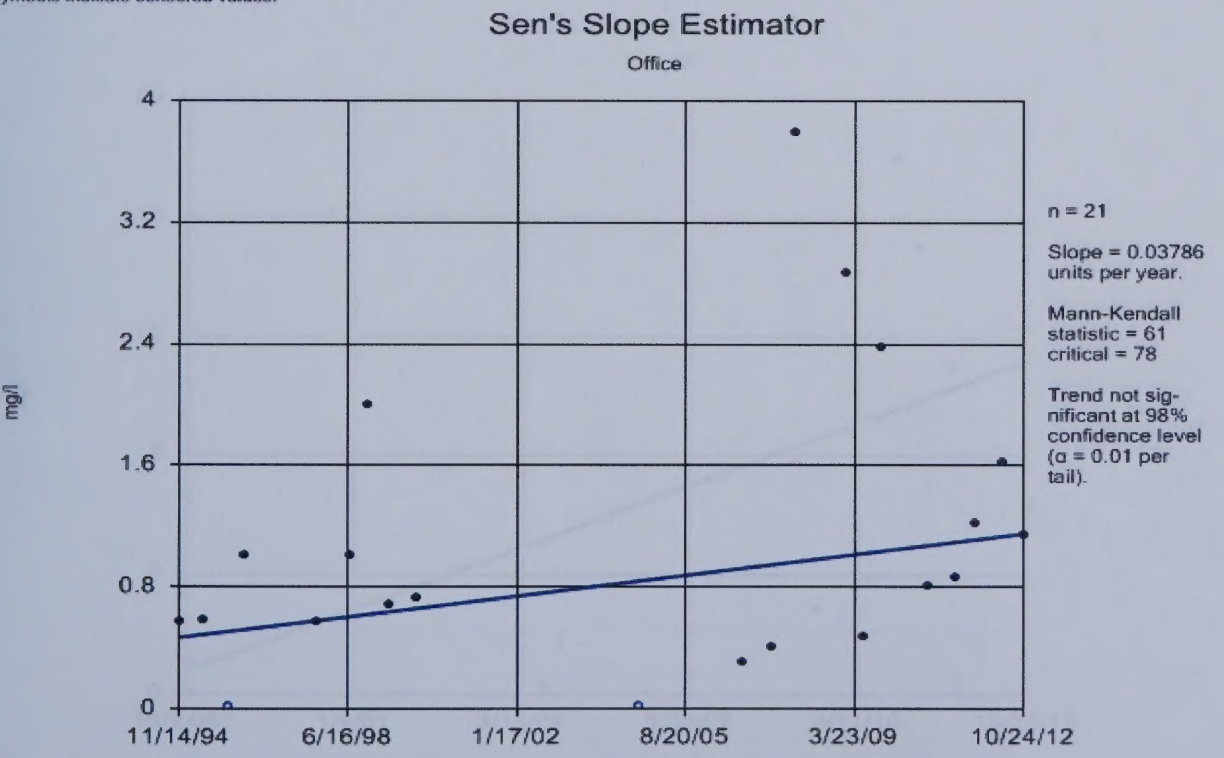
Constituent: Nitrate+Nitrite Analysis Run 12/3/2013 2:07 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-18: Trend Analysis for Iron in MW-OW

v.9.0.34 For regulatory purposes only. EPA

Hollow symbols indicate censored values.



Constituent: Iron Analysis Run 12/3/2013 2:10 PM

Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-19: Trend Analysis for Zinc in MW-OW

v.9.0.34 For regulatory purposes only. EPA

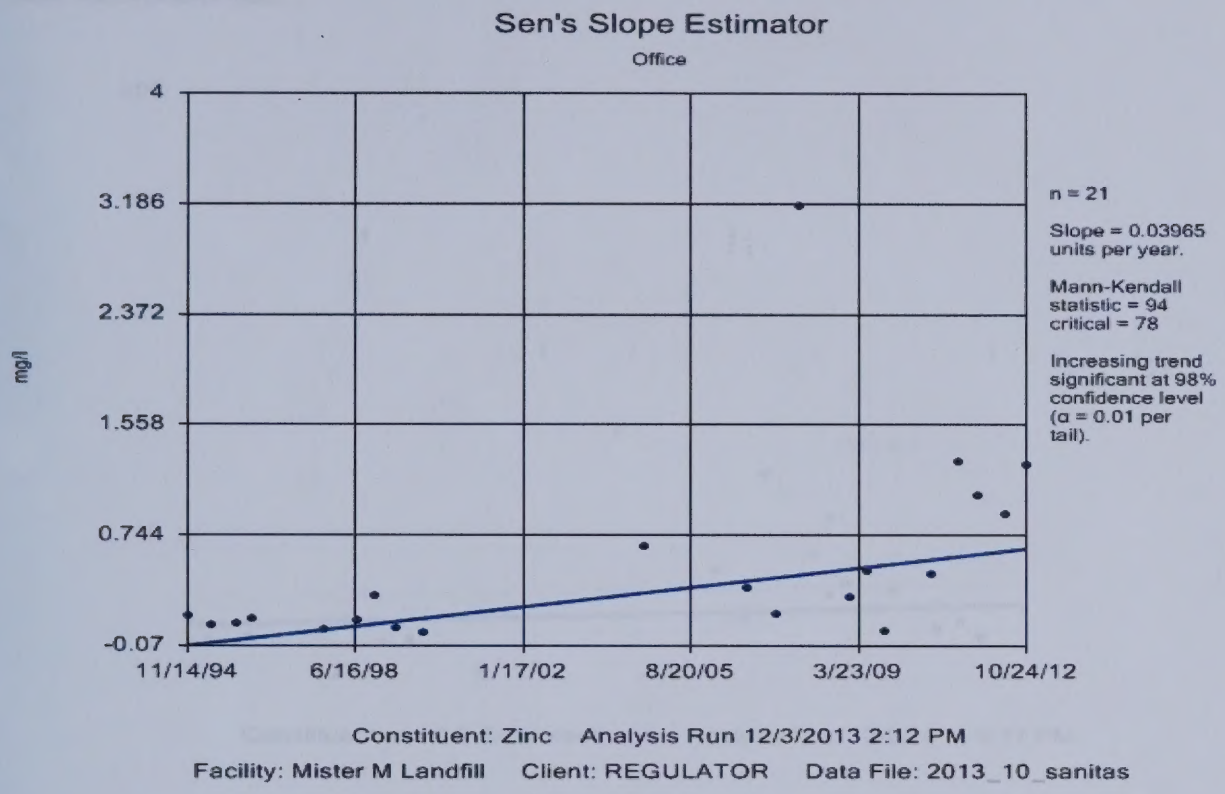


Figure F-20: Trend Analysis for cis-1,2-Dichloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA

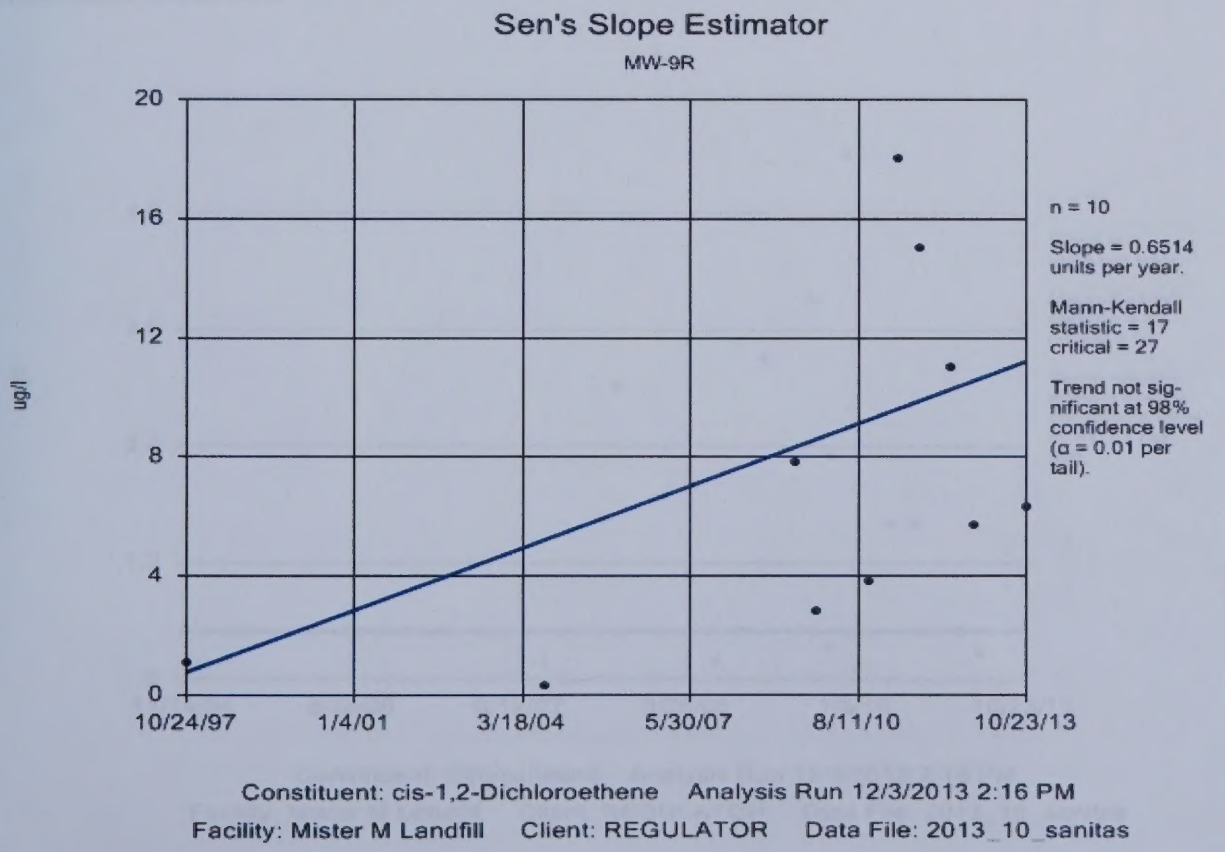
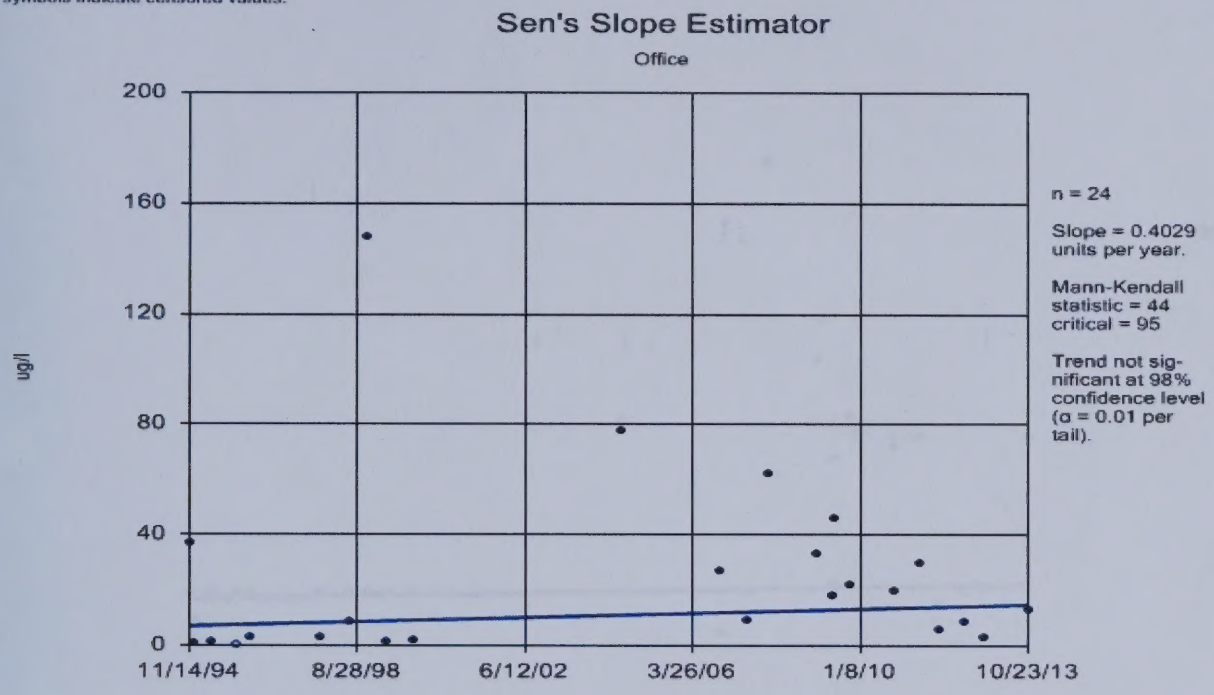


Figure F-21: Trend Analysis for cis-1,2-Dichloroethene in MW-OW

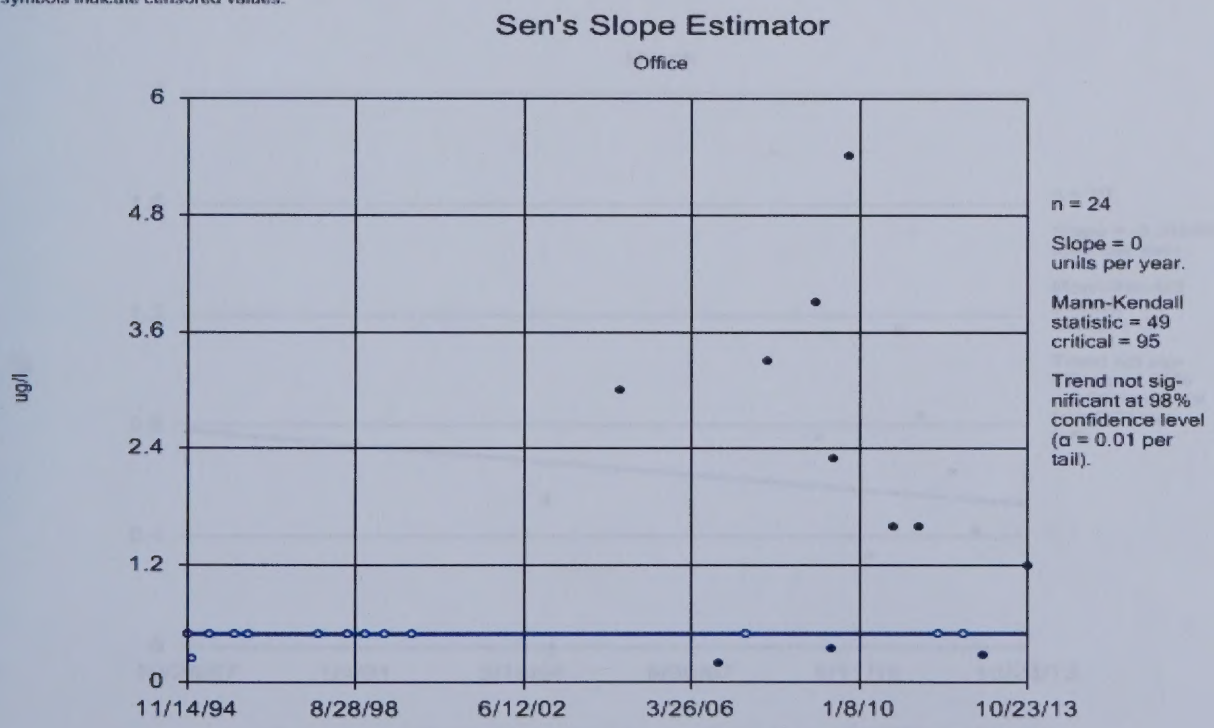
v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.



Constituent: cis-1,2-Dichloroethene Analysis Run 12/3/2013 2:17 PM
Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-22: Trend Analysis for Ethyl benzene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.



Constituent: Ethybenzene Analysis Run 12/3/2013 2:18 PM
Facility: Mister M Landfill Client: REGULATOR Data File: 2013_10_sanitas

Figure F-23: Trend Analysis for Styrene MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

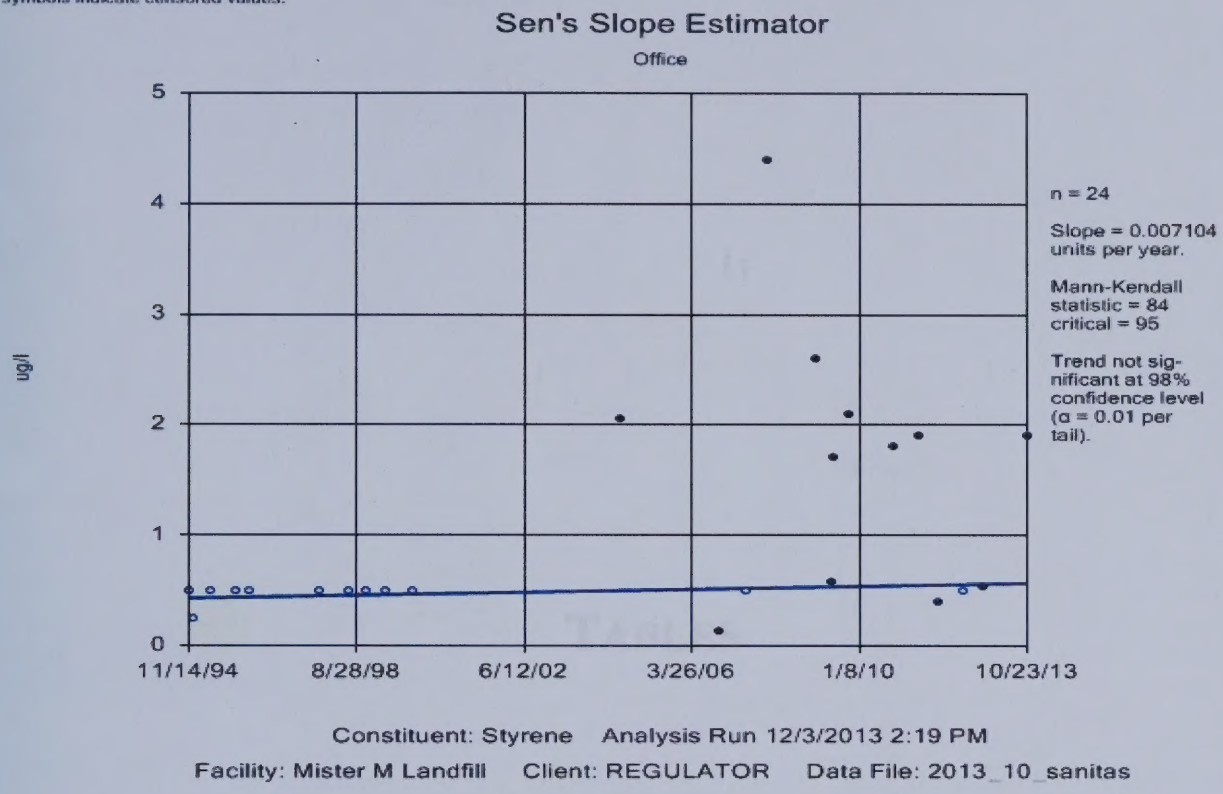
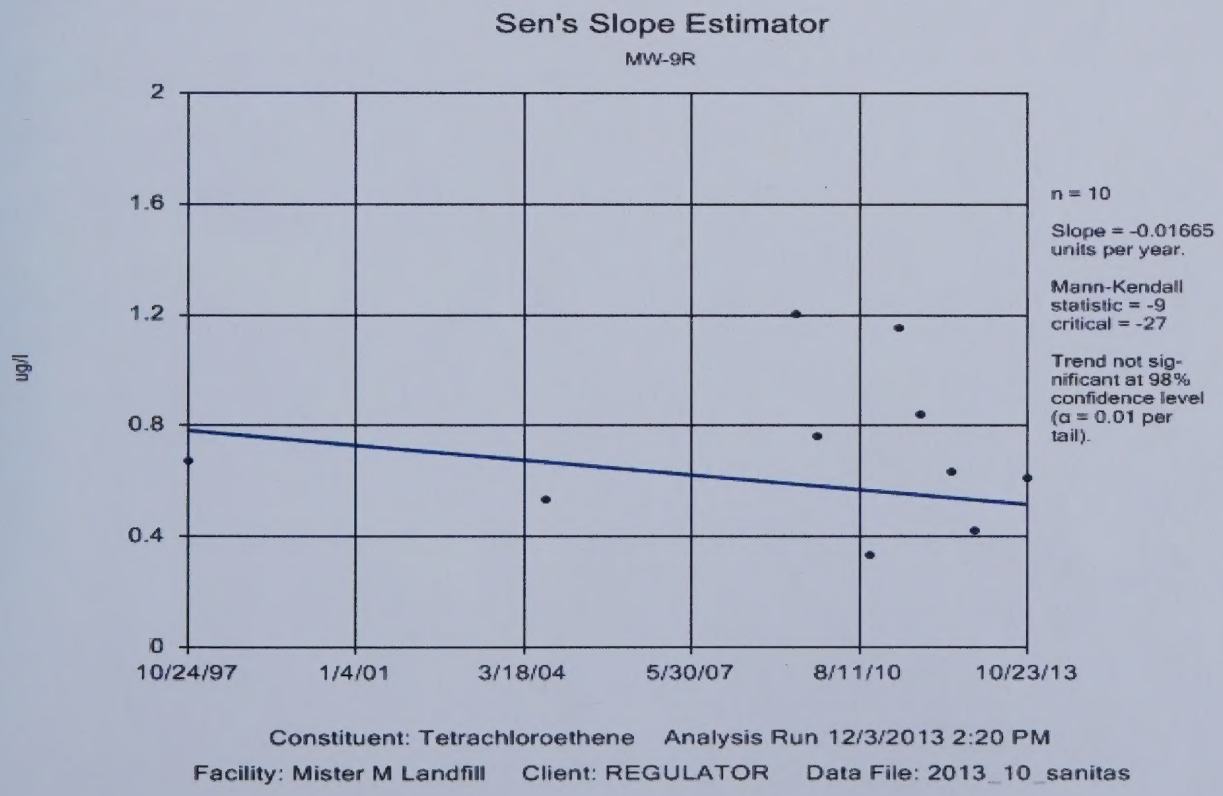


Figure F-24: Trend Analysis for Tetrachloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA



TABLES

Table 1: Summary of Results of Statistical Analyses

		Prediction Interval Analysis					Trend Analysis	
Parameter	Well	Distribution	Confidence Level (%)	Prediction Limit(s)	Result	Exceeds Limit?	Slope (per yr)	Significant ?
pH	MW-9R	N/A	98	N/A	7.3	N/A	-0.03	No
	MW-11	normal	96.54	6.8-8.0	7.4	No	N/A	N/A
	MW-12	normal	96.54	6.8-8.0	7.3	No	N/A	N/A
	MW-OW	N/A	98	N/A	7.5	N/A	+0.01	No
SC	MW-9R	N/A	N/A	N/A	1030	N/A	+56	No
	MW-11	normal	96.16	865.9	642	No	-7	N/A
	MW-12	normal	96.16	865.9	686	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	641	N/A	-68	No
Chloride	MW-9R	N/A	N/A	N/A	24	N/A	+3	No
	MW-11	normal	97.5	10.0	8	No	N/A	N/A
	MW-12	normal	97.5	10.0	4	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	3	N/A	-1.0	No
Sulfate	MW-9R	N/A	N/A	N/A	68	N/A	-3.07	No
	MW-11	non-normal	N/A	107	39	No	N/A	N/A
	MW-12	non-normal	N/A	107	40	No	N/A	N/A
	MW-OW	N/A	98	N/A	48	N/A	-0.182	No
Nitrate+Nitrite	MW-9R	N/A	98	N/A	0.97	N/A	-0.44	Yes
Arsenic	MW-12				***N/A***			
Barium	MW-11				***N/A***			
	MW-12				***N/A***			
Iron	MW-11				***N/A***			
	MW-12				***N/A***			
	MW-OW				***N/A***			
Zinc	MW-12				***N/A***			
	MW-OW				***N/A***			
cis-1,2-Dichloroethene	MW-9R	N/A	98	N/A	6.3	N/A	+0.65	No
	MW-OW	N/A	98	N/A	13	N/A	+0.40	No
Ethyl benzene	MW-OW	N/A	98	N/A	1.2	N/A	0	No
Styrene	MW-OW	N/A	98	N/A	ND	N/A	-0.01	No
Tetrachloroethene	MW-9R	N/A	N/A	N/A	0.61	N/A	-0.01	No

Notes:
N/A = Not analyzed
ND = Non-detect
N/A = Not applicable
? = Insufficient data for test

Table 1: Summary of Results of Statistical Analyses

			Prediction Interval Analysis				Trend Analysis	
Parameter	Well	Distribution	Confidence Level (%)	Prediction Limit(s)	Result	Exceeds Limit?	Slope (per yr)	Significant ?
pH	MW-1R	N/A	99	N/A	7.3	N/A	-0.07	No
	MW-11	normal	99.54	6.8-8.0	7.4	No	N/A	N/A
	MW-12	normal	99.54	6.8-8.0	7.3	No	N/A	N/A
	MW-DW	N/A	99	N/A	7.6	N/A	+0.07	No
SC	MW-1R	N/A	N/A	N/A	1030	N/A	+58	No
	MW-11	normal	99.78	655.9	842	No	-7	N/A
	MW-12	normal	99.78	655.9	818	No	N/A	N/A
	MW-DW	N/A	N/A	N/A	941	N/A	39	No
Chloride	MW-1R	N/A	N/A	N/A	24	N/A	+2	No
	MW-11	normal	97.8	10.9	8	No	N/A	N/A
	MW-12	normal	97.8	10.3	4	No	N/A	N/A
	MW-DW	N/A	N/A	N/A	3	N/A	-1.9	No
Sulfate	MW-1R	N/A	N/A	N/A	88	N/A	-3.07	No
	MW-11	non-normal	N/A	107	49	No	N/A	N/A
	MW-12	non-normal	N/A	107	50	No	N/A	N/A
	MW-DW	N/A	98	N/A	48	N/A	-0.182	No
Nitrate+nitrite	MW-1R	N/A	98	N/A	0.87	N/A	+0.04	Yes
Arsenic	MW-12				N/A			
Barium	MW-11				N/A			
	MW-12				N/A			
	MW-DW				N/A			
Iron	MW-11				N/A			
	MW-12				N/A			
	MW-DW				N/A			
Zinc	MW-12				N/A			
	MW-DW				N/A			
cis-1,2-dichloroethene	MW-1R	N/A	99	N/A	0.3	N/A	+0.05	No
	MW-DW	N/A	99	N/A	13	N/A	+0.40	No
Ethyl benzene	MW-DW	N/A	99	N/A	1.2	N/A	0	No
Styrene	MW-DW	N/A	99	N/A	N/D	N/A	-0.01	No
Tetrachloroethene	MW-DW	N/A	N/A	N/A	0.21	N/A	0.01	No

Notes:
N/A = Not analyzed
N/D = Non-detected
N/A = Not applicable
? = Insufficient data for test

CLOSED MISTER M LANDFILL, LICENSE #302
LEWISTOWN, FERGUS COUNTY, MONTANA

OCTOBER 2012 GROUNDWATER MONITORING RESULTS AND STATISTICAL ANALYSES

Prepared By:

Montana Department of Environmental Quality

Solid Waste Section

December 4, 2012

RECEIVED

DEC 05 2012

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

INTERNAL ROUTING SLIP

SW PROGRAM

NAME	DATE	Initials
Rick Thompson 4	12/24	RT
Mary Hendrickson 2	12/13	MH
~~Tim Stepp~~		
Martin Van Oort (1st)		
~~Kathleen O'Hern~~		
~~Bob McWilliams~~		
Janet Handy (~~last~~) (1st)	12/5	JH
~~Ed Thamke~~		
~~Dana David~~		

JV PROGRAM

NAME	INITIALS	DATE
Bruce Meyer 3		
~~Mitzi Hansen~~		
~~Carda Taylor~~		

MISC/ NOTES

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Groundwater monitoring at the closed Mister M Landfill, License #302, was conducted in October 2012 by the Montana Department of Environmental Quality (MDEQ), Solid Waste Section, according to the July 2011 Sampling and Analysis Plan for Groundwater (SAP) (MDEQ, 2011 [2]). The Mister M Landfill is located in Fergus County, Montana, approximately four miles east of Lewistown on US Highway 87, as shown in Figure 1. As shown in Figure 2, the landfill lies in a small south facing coulee which drains to Boyd Creek. The facility received Class II wastes from 1956 to 1998, and was granted interim closure status on December 5, 2000. The current owners, Marvin and Sandra Mintyala, operated the facility from 1974 until approximately 2000, when the site was abandoned.

According to the Geohydrologic Characterization (Gillespie, 1993 revised; and Gillespie, 1994) the landfill is underlain by the Kootenai Formation, which consists of predominately shale with some silty sandstone. A basal unit of sandstone in the Kootenai formation is the uppermost aquifer in the area. Minor amounts of water have been encountered in the upper portions of the Kootenai Formation but most of the monitoring wells completed in the upper Kootenai Formation at the site have frequently been dry or contained minimal volumes of water.

Previous groundwater sampling at the facility was conducted by the owners or their consultants from 1993-1999 (Gillespie, 1995 and 1996; Energy Laboratories, 1997, 1998 [1], and 1998 [2]; and Portage Environmental, 1999 and 2000). From 2003-2007 Tetra Tech, Inc was authorized by the MDEQ to conduct groundwater monitoring in the absence of action by the owners (Energy Laboratories, 2003, 2004, 2005, 2006, and 2007; Maxim, 2005; Tetra Tech, 2006 and 2008). MDEQ Solid Waste Section personnel have conducted groundwater monitoring from January 2009 to the present (MDEQ, 2009 [1]; 2009 [2]; 2010 [1]; 2010 [2], 2011 [1], 2011[3], 2012).

2.0 Field Procedures

MDEQ Solid Waste Section personnel conducted monitoring activities on October 23 and 24, 2012, including monitoring well inspections, static water level (SWL) measurements, and groundwater sample collection as part of the detection monitoring program currently in effect for the facility. The locations of the monitoring points and the activities that were performed at each point are shown in Figure 3. Copies of the field notes are included in Appendix A. All field activities described in this report were conducted in accordance with the approved July 2011 SAP, and any deviations from the SAP are described herein. The analysis of groundwater samples was conducted by Energy Laboratories Inc, in Helena, Montana.

2.1 Well Inspections

The monitoring wells currently in use were inspected on October 23, 2012. MW-OW does not have an external casing and the new locking cap installed in April 2009 is already showing significant weather wear. All other monitoring wells are in good condition.

2.2 Water Level Measurements

Static water levels were measured on October 23, 2012, in wells MW-5, MW-9R, MW-11, MW-12, and MW-OW using a rented Solinst electric water level meter. The total depths of wells MW-9R, MW-11, and MW-12 were also recorded. Static water level could not be recorded for well MW-6 because the lock on the well was stuck and the well could not be opened.

2.3 Groundwater Sampling

Groundwater samples were collected October 23 and 24, 2012, from wells MW-9R, MW-11, MW-12, MW-HW, and MW-OW. A field duplicate was collected from well MW-12. At each well that was sampled, samples were collected for all of the parameters listed in the SAP.

The wells were purged and sampled following the procedures in the SAP with the deviations described below. Copies of the Monitoring Well Purging and Sampling Forms for each well are

included in Appendix A. All of the wells were purged and sampled using disposable bailers. Field water quality measurements were made using a rented YSI model 556-02 water quality meter, which was calibrated by TRS Environmental prior to shipment.

After collection, the samples were labeled as described in the SAP and were stored on ice in a laboratory supplied cooler. The samples were stored according to chain-of-custody requirements and hand delivered to Energy Laboratories Inc in Helena, Montana on October 25, 2012.

3.0 Monitoring Results

3.1 Groundwater Levels and Flow

The water levels in October 2012 ranged from 2.63 to 8.03 feet lower than the May 2012 measurements, and 1.19 feet lower to 5.15 feet lower than the October 2011 measurements. All of the monitoring wells at the site have shown a consistent trend of higher water levels in the spring and lower in the fall, due to seasonal precipitation and snowmelt, except for well MW-11 where the water level rose for the first four measurements since installation of the well in October 2010, then fell for the first time from May to October 2012. The reason for this difference in MW-11 is unknown, but continued monitoring will show if MW-11 will now follow the same water level pattern seen in other site wells. The October 2012 water levels were on average lower than October 2011 levels due to lower precipitation this year. Figure 4 displays the October 2012 static water levels on a map. No attempt was made to contour the static water levels as the shallow wells are completed in minor water bearing zones of unknown horizontal extent and connectivity, and the water level measurements made in the deep water bearing zone are from wells that have not yet been surveyed. Groundwater flow in the shallow water bearing zones likely follows local topography and flows in a south to southwest direction. Groundwater flow in the deep water bearing zone is assumed to be to the southwest based on records from domestic wells in the area. Copies of the Water Level Measurement Forms are included in Appendix A. Tables containing historic water levels and hydrographs for both the shallow and deep water bearing zones are included in Appendix B.

3.2 Data Validation

Upon receipt from the laboratory, the analytical results were validated as described in the SAP to ensure that the data quality objectives had been met. The samples were received by the laboratory at a temperature of 6.0°C. Several VOC vials were received with small air bubbles at the laboratory. The cause of these bubbles is unknown, as samples were collected in the same fashion as previous events and no air bubbles were noted at the time of collection. These small bubbles are unlikely to affect the analytical results. The pH of all samples was within acceptable limits. All samples were analyzed within the required holding times. The relative percent

difference for all field and laboratory duplicates were within control limits. All laboratory control samples and blanks were acceptable, with the exception of a relative percent difference exceedance for Bromomethane and Methyl ethyl ketone in a sample matrix spike duplicate from well MW-OW. Bromomethane and Methyl ethyl ketone were not detected in any samples and no results are flagged. No VOCs were detected in the Trip Blank. A copy of the laboratory QA/QC report is included in Appendix C.

3.3 Groundwater Analytical Results

The following sections discuss the analytical results grouped by analyte type. A copy of the laboratory analytical report is included in Appendix D. Historical concentration plots for all parameters detected during this sampling event and a table containing historical analytical results are included in Appendix E.

3.3.1 Indicator Parameters

Groundwater at the facility has a neutral to slightly alkaline pH, with values from 7.3 to 7.4 reported for this event. Specific conductance ranged from 649 μmhos/cm in the sample from MW-11 to 974 μmhos/cm in MW-9R. For all wells except MW-9R and MW-OW the concentrations of Chloride and Sulfate remained near typical values, with Chloride ranging from 2 to 21 mg/l, and Sulfate ranging from 32 to 58 mg/l. The concentrations of Chloride decreased in MW-9R and MW-OW, but remained within the typical range for those wells. Nitrate + Nitrite was not detected in MW-11, MW-12, and MW-HW. Nitrate + Nitrite was detected at a concentration of 1.94 mg/l in MW-9R, well below the maximum contaminant level (MCL) of 10 mg/L and in the range of previous values at MW-9R. This concentration is also similar those observed in the shallow background well MW-5 in previous sampling events and in other shallow wells.

3.3.2 Dissolved Metals

Four metals were detected in facility wells during this sampling event. The detections of metals increased in frequency due to lower reporting limits for this sampling event. Arsenic was detected in both samples from MW-12 at a concentration of 0.001 mg/l, and Barium was

detected in all wells sampled for metals at concentrations ranging from 0.028 to 0.068 mg/l. These detections were all below the previous reporting limits of 0.005 mg/l for Arsenic and 0.1 mg/l for Barium, and continued monitoring with the new lower reporting limits will demonstrate if these are typical concentrations. The highest concentration of Barium was reported in the background well, MW-HW. Iron was detected in MW-11, MW-12 and its duplicate, and MW-OW at 0.22, 0.61, 0.60, and 1.14 mg/l respectively. The concentration in MW-OW represents a small decrease from the May 2012 value, and the concentrations in MW-11 and MW-12 remained almost unchanged. The values for MW-11 and MW-12 are typical for deeper aquifer wells, and the value for MW-OW is higher than typical deeper aquifer values. The concentrations in MW-12 and MW-OW are greater than the secondary MCL for Iron of 0.3 mg/l. Zinc was detected in MW-OW at 1.26 mg/l, in MW-12 and it's duplicate at 0.011 mg/l, and in MW-HW at 0.013 mg/l. The concentration of Zinc at MW-HW is typical for that well and the concentration at MW-12 is similar to that in MW-HW. Although this is the first detection of Zinc in the two new deeper aquifer monitoring wells at the facility, the previous reporting limit was 0.01 mg/l so similar concentrations may have been censored during past sampling events. The zinc concentration in MW-OW was the third highest recorded at that well.

3.3.3 Volatile Organic Compounds

Three VOCs were detected in MW-OW during this sampling event, compared with two in May 2012. All three compounds (concentrations in µg/L): cis-1,2-Dichloroethene (2.8), Ethyl benzene (0.28 J), and Styrene (0.54 J) have been routinely detected in MW-OW. The concentration of cis-1,2-Dichloroethene decreased significantly from the May 2012 sampling event and was the lowest concentration recorded since 1999. Ethyl benzene and Styrene were not detected during the May 2012 sampling event, and the current concentrations are below concentrations routinely detected from 2004 to 2011. Two VOCs were detected in MW-9R: Tetrachloroethene (0.42 J) and cis-1,2-Dichloroethene (5.7). Both of these compounds have been detected routinely in MW-9R and the concentrations were lower than those measured during the previous two years. No VOCs were detected in MW-11, MW-12, or MW-HW. VOC's have not been typically detected in MW-11 and MW-HW, however cis-1,2-Dichloroethene had been detected at very low concentrations in MW-12 during the October 2010 and May 2011 sampling events.

4.0 STATISTICAL ANALYSIS

4.1 STATISTICAL METHODS

The statistical analyses were performed using the statistical software package Sanitas v.9.0.34. The validated analytical data was first screened to determine which parameters required statistical analysis. Only parameters which were detected in one or more compliance wells (MW-11 and MW-12) and had been historically detected at least once in the background well (MW-HW) were analyzed using an inter-well prediction limit. If a parameter was detected in a compliance well, but was always non-detected in the background dataset, the background value was set as the detection limit and any detection of that parameter above the detection limit was considered a statistical exceedance of background. As a result of the screening described above, the parameters selected for prediction limit analysis were: pH, SC, Chloride, Sulfate, Arsenic, Barium, Iron, and Zinc.

The background dataset was screened to determine if trends were present using the Sen's Slope/Mann Kendall test. Analysis of the data for Sulfate in MW-HW indicated a statistically significant decreasing trend, thus the background dataset was reduced to include only non-trending data and the data from 6/10/1980 to 12/2/1999 were excluded.

Each selected parameter was compared to the background dataset using an inter-well prediction limit analysis. The Sanitas software determines the distribution of the background dataset and performs the appropriate statistical test for that distribution. If the prediction limit analysis indicated an exceedance of background levels, a Sen's Slope/Mann Kendall test was conducted to analyze any trends in the data. All of the statistical tests were performed at a 95% site-wide confidence level, or the maximum confidence level that was possible given the size of the background dataset if a 95% confidence level was not possible.

A Sen's Slope/Mann Kendall test was also conducted on all parameters detected in the interior monitoring wells (MW-9R and MW-OW) to analyze any trends in the data.

4.2 Analysis Results

Table 1 contains a summary of the results of the statistical analyses. The full results of the statistical analyses are included in Appendix F. Due to the small size of the background dataset the site-wide confidence levels for non-parametric tests were less than 95%. The tests for Sulfate had a site-wide confidence level of 85.71%, the tests for Arsenic and Barium had a site-wide confidence level of 91.30%, and the tests for Iron had a site-wide confidence level of 91.67%.

The values from the current sampling event for all parameters in compliance wells MW-11 and MW-12 were within prediction limits.

Trend analyses for well MW-9R indicated significant decreasing trends for Sulfate and Nitrate + Nitrite. The cause of these trends is unknown, but MW-9R is completed in a shallow aquifer which produces very little water, thus changes in groundwater chemistry are not unexpected. A significant increasing trend was also noted for Zinc in MW-OW. Metals contamination in MW-OW is thought to be a result of previous use of the well as a water supply well, and the increase in Zinc may be due to continued corrosion of metal components which may remain in the well.

5.0 Conclusions and Recommendations

Groundwater monitoring was conducted by the MDEQ at the Mister M Landfill on October 23 and 24, 2012. Water levels were measured in five wells, and groundwater samples were collected from five wells. Water levels could not be measured in MW-6 because the lock was jammed. All currently used wells were inspected.

The static water levels measured during the October 2012 event decreased on average from the May 2012 event and from the October 2011 event. The seasonal variations in water level noted in the facility wells are evidence that a relatively direct connection may exist between the surface and groundwater. Water levels will continue to be monitored semi-annually in the future to provide additional data on water level trends.

Additional data from the background well, MW-HW, is useful for evaluating the results from the other deep wells and increasing the power of the statistical tests. In particular, additional data is needed from this well on background levels of metals concentrations below the previous reporting limits. MW-HW will continue to be sampled on a semi-annual basis to increase the size of the background dataset for the compliance wells. Two VOCs were detected in MW-9R at much lower levels than the May 2012 sampling event. The contaminants present in MW-9R are different than those seen in MW-OW indicating that the contamination may be from a different source or MW-9R may be closer to the source area than MW-OW; however the precise source of these VOCs is unknown. Additional data is needed to evaluate the contamination in that well. Well MW-9R will continue to be sampled in future events for Inorganics and VOCs. Well MW-OW continues to show both inorganic and organic contamination. Sulfate and Chloride have returned to near normal levels, while Zinc and Iron concentrations remain above normal levels. These metals are possibly the result of previous down-hole equipment associated with the use of MW-OW as a water supply well and not due to landfill leachate. VOCs continue to be detected in MW-OW at generally low levels, but the number of VOCs detected and the concentrations measured during the October 2012 sampling event were much lower than recent sampling events. MW-OW will continue to be sampled to track concentration trends.

The analytical results and statistical analyses from compliance wells MW-11 and MW-12 show no impacts from landfill leachate. The one VOC, cis-1,2-Dichloroethene, which was previously detected at a very low level in MW-12 was not detected during the past three sampling events. All parameters in the compliance wells are below background levels thus the facility remains in detection monitoring. MW-11 and MW-12 will continue to be sampled semi-annually as the point of compliance wells for the facility. The next groundwater sampling event is tentatively scheduled for May 2013.

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TABLES

Table 1: Summary of Results of Statistical Analyses

		Prediction Interval Analysis					Trend Analysis	
Parameter	Well	Distribution	Confidence Level (%)	Prediction Limit(s)	Result	Exceeds Limit?	Slope (per yr)	Significant ?
pH	MW-9R	N/A	N/A	N/A	7.4	N/A	-0.029	No
	MW-11	normal	98.75	6.91-8.04	7.4	No	N/A	N/A
	MW-12	normal	98.75	6.91-8.04	7.3	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	7.4	N/A	+0.023	No
SC	MW-9R	N/A	N/A	N/A	974	N/A	+14.5	No
	MW-11	normal	97.5	859.6	649	No	N/A	N/A
	MW-12	normal	97.5	859.6	697	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	709	N/A	-2.64	No
Chloride	MW-9R	N/A	N/A	N/A	21	N/A	+1.513	No
	MW-11	normal	97.5	12.0	2	No	N/A	N/A
	MW-12	normal	97.5	12.0	3	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	4	N/A	+0.576	No
Sulfate	MW-9R	N/A	N/A	N/A	58	N/A	-4.21	Yes
	MW-11	non-normal	92.58	77.5	42	No	N/A	N/A
	MW-12	non-normal	92.58	77.5	32	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	32	N/A	-0.338	No
Nitrate+Nitrite	MW-9R	N/A	N/A	N/A	1.94	N/A	-0.412	Yes
Arsenic	MW-12	ND	95.55	0.001	0.001	No	N/A	N/A
Barium	MW-11	non-normal	95.55	0.08	0.035	No	N/A	N/A
	MW-12	non-normal	95.55	0.08	0.028	No	N/A	N/A
Iron	MW-11	non-normal	95.74	0.75	0.22	No	N/A	N/A
	MW-12	non-normal	95.74	0.75	0.605	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	1.14	N/A	+0.038	No
Zinc	MW-12	normal	97.5	0.0779	0.011	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	1.26	N/A	+0.040	Yes
cis-1,2-Dichloroethene	MW-9R	N/A	N/A	N/A	5.7	N/A	+0.815	No
	MW-OW	N/A	N/A	N/A	2.8	N/A	+0.405	No
Ethyl benzene	MW-OW	N/A	N/A	N/A	0.28J	N/A	0	No
Styrene	MW-OW	N/A	N/A	N/A	0.54J	N/A	+0.003	No
Tetrachloroethene	MW-9R	N/A	N/A	N/A	0.42J	N/A	+0.019	No

Notes:
ND = Non-detect
N/A = Not applicable
? = Insufficient data for test

FIGURES

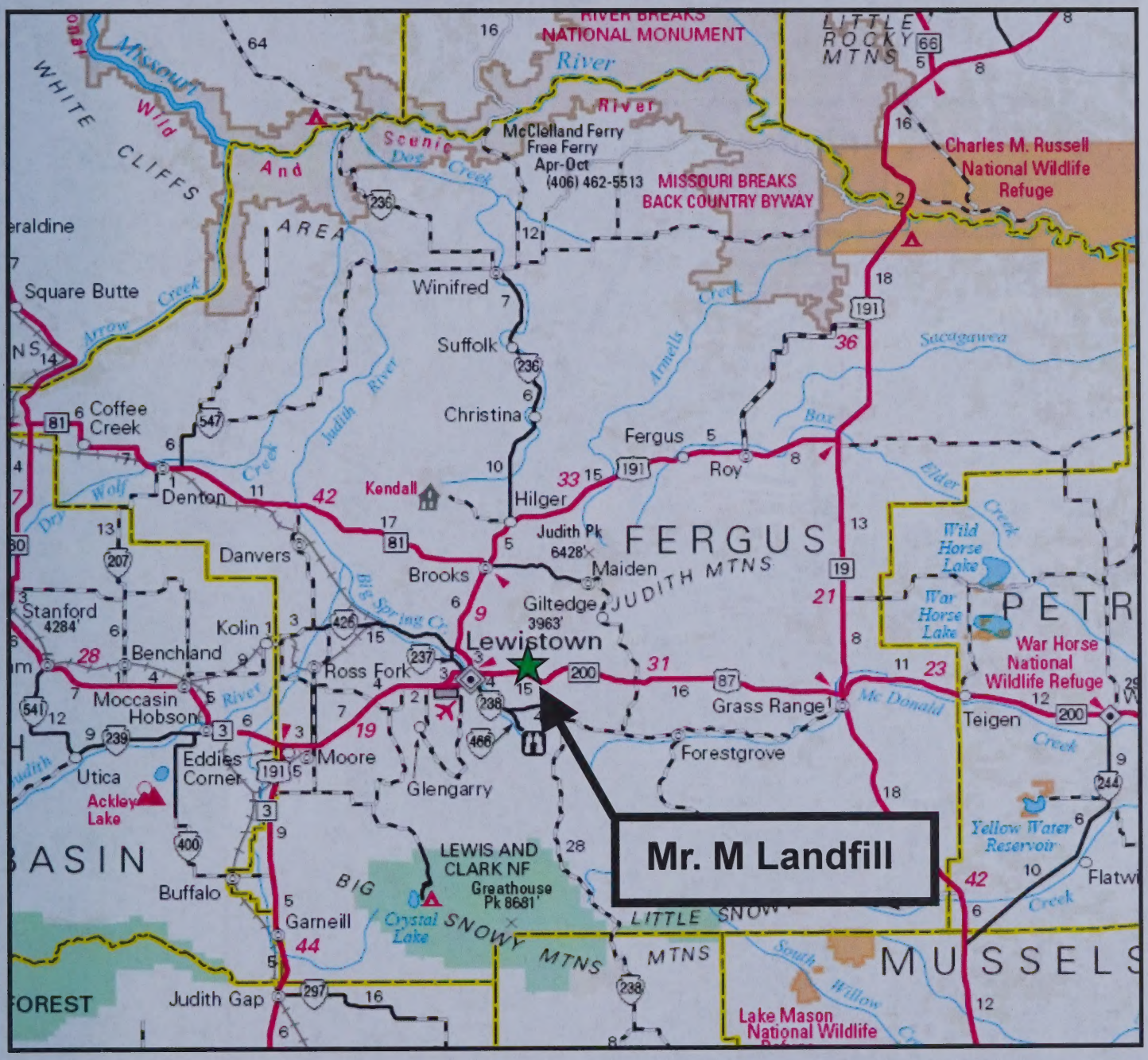


Figure 1: Location Map

Adapted from State of Montana Highway Map.

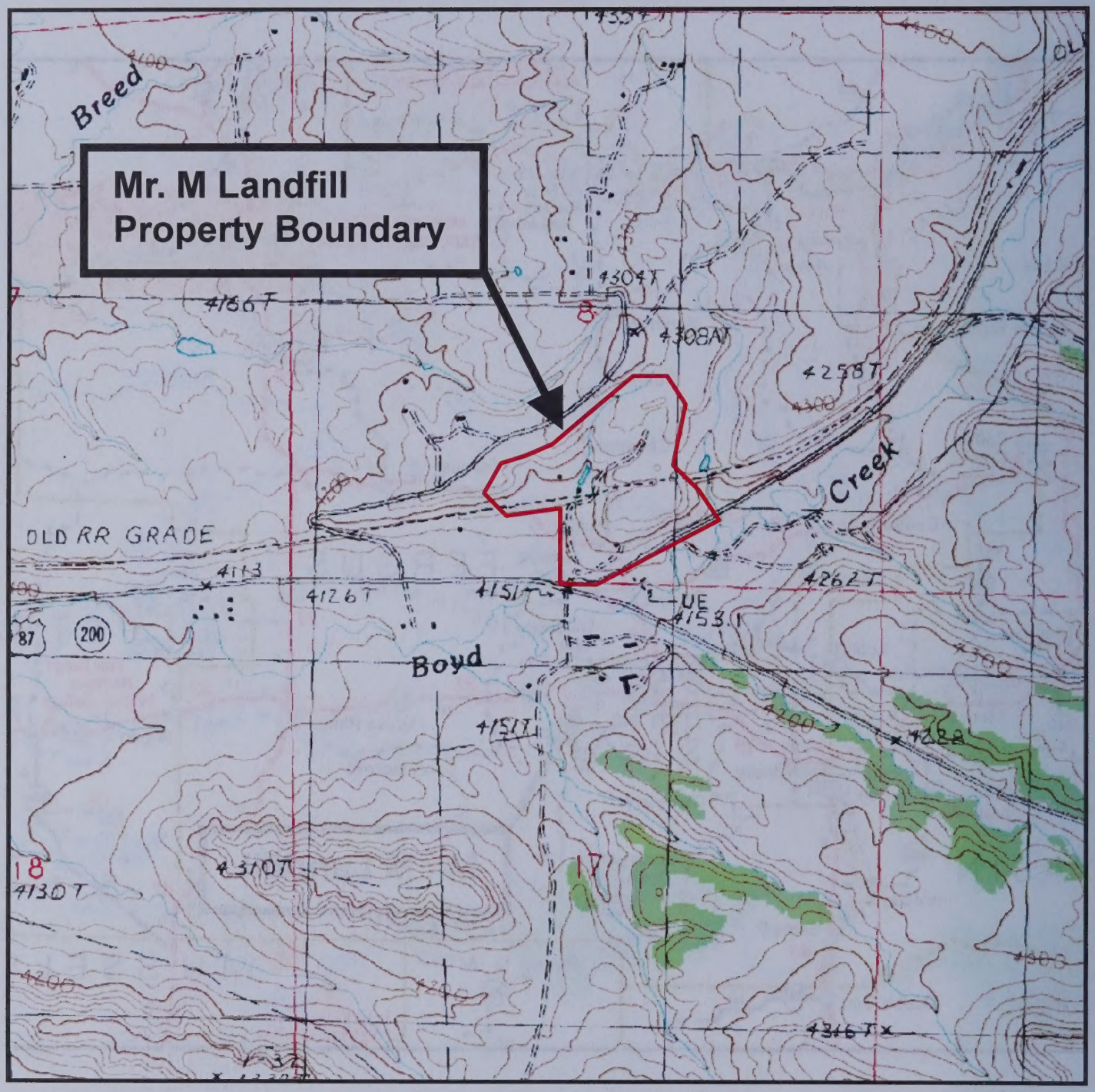


Figure 2: Facility Map

Adapted from USGS Pike Creek 24k Quadrangle.

Figure 3: Locations of Monitoring Points

Base Aerial Photo from 2012.

Figure 4: Groundwater Levels

Base Aerial Photo from 2012.

The reference elevations for MW-9R, MW-11, MW-12, and MW-OW are estimated from topographic contours and field observations.

APPENDIX A: FIELD NOTES & FORMS

9/12/12 Martin Van Oord

1300 On site - New Gate!
Appears horses have been here.

1315 South Vent O_2 Sensor dead.
LEL = 0 H_2S = 0 CO = 0

1320 North Vent
LEL = 0 H_2S = 0 CO = 0

1325 MW-5M Horses are here.
LEL = 0 H_2S = 0.2↓ CO = 0

1330 Neighbor across road (to NW) has opened new gate at NW corner of landfill. Closed gate. Horses back in neighbors pasture.

1345 MW-6M
LEL = 0 H_2S = 0.8↓ CO = 0

1405 MW-2
LEL = 0 H_2S = 1.4↓ CO = 0

1410 MW-1
LEL = 0 H_2S = 1.0↓ CO = 0

1420 Leave site.

"Life in the Rain"

10/23/12 Martin Van Oort

1015 On site

1025 At MW-6M
Calibrate CH_4 Meter

1030 MW-6M
CH_4 = 0 O_2 = 18.1
CO = 0 H_2S = 0

1035 MW-6 DTW =
Lock jammed.

1045 MW-5M
CH_4 = 0→? O_2 = 8.8
CO = 0 H_2S = 0

1050 MW-5 DTW = 102.16
Gate by MW-5 was open.
Closed it.

1100 Martin Vent
CH_4 = 0 O_2 = 20.9
CO = 0 H_2S = 0

1105 Study Vent
CH_4 = 0 O_2 = 20.9
CO = 0 H_2S = 0

1110 MW-9R DTW = 41.97
Total Depth = 50.25

1115 MW-~~6M~~ DTW = 30.55

10/23/12 Martin Van Oort

1120 MW-2
CH_4 = 0 O_2 = 19.5
CO = 0 H_2S = 0

1125 MW-11 DTW = 26.95
Total Depth = 82.25

1130 MW-1
CH_4 = 0 O_2 = 19.8
CO = 0 H_2S = 0

1135 MW-12 DTW = 4.69
Total Depth = 105.2
Water level very steady,
low gas to equilibrate.

1150 Set up at MW-HW
1205 Start Purge
1235 Sample MW-HW
1243 Finished, clean up
1300 Set up at MW-11
1337 Start Purge
1515 Sample MW-11
1525 Finished, clean up
1537 Set up at MW-9R
1549 Start Purge
1618 Purged well dry, let recover.
1625 MW-12 DTW = 4.57
1630 Leave site

"Rain in the Rain"

10/24/12 Martin Van Dort

820 On site, ~ 2" snow overnight
830 At MW-9R, preparing to take sample.
900 Finished, cleaning up
910 At MW-9W, setting up
935 Start purge
1140 Sample MW-9W
1145 Cleaning up
1200 Lunch
1245 Back on site
1250 At MW-12, setting up
1300 Start purge
1610 Sample MW-12, DUP 1615
1620 Finished, cleaning up
1640 Leave site

Rite in the Rain

Water Level Measurement Form

Site Name: Mister M Landfill Date: 10/23/12

Personnel: Martin Van Oort Equipment: Solinst 200'

Field Conditions: Cool, light breeze, mostly cloudy

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-6	1035	NA			Locked Bunnal, no access
MW-5	1050	102.16			
MW-9R	1110	41.97			TD = 50.25
MW-OW	1115	30.55			
MW-11	1125	26.95			TD = 82.25
MW-12	1135	4.69 *			TD = 105.2
MW-12	1625	4.57			

Notes: * Water level in 4.69 was rising slowly after unsealing cap, let equilibrate then remeasured.

Signature: [illegible]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: House Well

Personnel: Martin Van Oort Sample ID: M-M-MW-HW

Date: 10/23/12 Field Conditions: Chilly & breezy, mostly cloudy

Condition of Well: Domestic well

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed pump Pump Depth: — Start Time: 1205

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1206	2			7.03	0.777	12.27	127.0	12.34		
1209	5	2		7.31	0.785	12.67	120.3	6.37		
1212	11			7.23	0.784	11.93	122.3	3.71		
1220	27			7.24	0.784	10.89	120.5	2.81		
1225	39.5	2.5		7.24	0.784	10.85	119.2	2.81		
Pint Sample										
1243	85			7.23	0.783	10.70	118.0	3.03		

Sample Time: 1235 Sampling Method: Faucet from hydrant by house

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: ~85 gal Final Depth to Water: — End Time: 1243

Notes:

Sampler Signature: [signature]

Page 1 of 1

9-15

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-11

Personnel: Martin Van Oort Sample ID: M-M-MW-11

Date: 10/23/12 Field Conditions: Windy & cold (28°F), cloudy

Condition of Well: Good

Depth to Water (DTW): 26.95 Total Depth of Well (TD): 82.25

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 9.01 Three Well Volumes: 27.04

Purge Equipment: Bailer Pump Depth: — Start Time: 1337

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1339	1			7.23	0.652	8.00	77.6	7.75		
1356	6			7.25	0.652	7.87	17.9	3.48		
1413	11			7.27	0.651	8.08	-12.9	3.42		
1430	16			7.26	0.650	8.20	-26.3	3.18		
1447	21			7.29	0.651	8.21	-33.1	3.21		
1503	26			7.29	0.650	8.25	-36.2	3.09		
1510	27			7.30	0.651	8.13	-35.8	3.52		

Sample Time: 1515 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 28 Final Depth to Water: — End Time: 1523

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin Van Oort Sample ID: M-M-MW-9R

Date: 10/23/12 + 10/24/12 Field Conditions: Mostly cloudy, 28°, windy

Condition of Well: Ok

Depth to Water (DTW): 41.97 Total Depth of Well (TD): 50.25

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 1.35 Three Well Volumes: 4.05

Purge Equipment: Bailer Pump Depth: Start Time: 1549

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1552	1			7.05	1.010	7.66	93.0	5.61		
1603	2			7.06	0.998	7.46	89.6	4.09		
1618	4			7.07	1.035	7.19	93.4	4.10		Dry

10/24/12

Sample Time: 845 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 5 Final Depth to Water: – End Time: 900

Notes:

Sampler Signature:

444-2329

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: Office Well

Personnel: Martin Van Oost Sample ID: M-M-MW-OW

Date: 10/24/12 Field Conditions: No water casing

Condition of Well: flowing, 17°, partly cloudy

Depth to Water (DTW): 30.99 Total Depth of Well (TD): ~78

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 30.99 Three Well Volumes: 92.95

Purge Equipment: Bailer Pump Depth: — Start Time: 935

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (ºC)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
936	1			6.78	0.692	7.04	227.1	4.52		
947	6			7.33	0.692	7.31	9.1	2.90		
1007	16			7.34	0.690	7.71	-33.0	2.88		
1030	26			7.27	0.692	7.90	-64.0	2.69		
1040	31			7.24	0.696	7.79	-79.1	2.82		
1057	36			6.96	0.706	7.70	-83.9	3.35		
1113	41			6.93	0.708	7.86	-84.8	3.35		
1124	46			6.91	0.712	7.90	-86.3	2.90		

Sample Time: 1140 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 47 Final Depth to Water: — End Time: 1145

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-12

Personnel: Martin Van Oort Sample ID: M-M-MW-12 & M-M-MW-12-DUP

Date: 10/24/12 Field Conditions: Partly cloudy, light wind, 26°

Condition of Well: Good

Depth to Water (DTW): 4.57 Total Depth of Well (TD): 105.2

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 16.40 Three Well Volumes: 49.21

Purge Equipment: Bailer Pump Depth: — Start Time: 1309

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1310	1			7.05	0.700	8.00	56.3	8.07		
1322	6			6.91	0.703	7.82	-10.5	3.60		
1350	16			6.95	0.700	7.81	-44.4	2.85		
1406	26			6.99	0.700	7.82	-46.3	3.48		
1442	31			6.97	0.700	7.79	-47.6	3.23		
1511	41			6.99	0.698	7.72	-47.5	3.46		
1553	50			6.96	0.700	8.03	-48.1	3.07		

Sample Time: 1610 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 51 Final Depth to Water: — End Time: 1620

Notes: Dup 1615

Sampler Signature: [signature]

APPENDIX B: HISTORICAL GROUNDWATER LEVELS

Table B-1: Historical Water Levels

Date	MW-1	MW-2	MW-4	MW-5	MW-6	MW-7	MW-7R	MW-8	MW-9	MW-9R	MW-10	MW-10R	MW-11	MW-12	MW-OW
6/16/93	Dry	Dry	Dry	Dry	Dry	Dry		Dry							NM
10/14/94	NM	NM	NM	NM	NM	NM		NM	Dry		4155.69				NM
12/15/95	4154.12	Dry	Dry	4177.65	4160.64	4173.00		Dry	4140.77		4160.92				NM
3/28/96	4157.37	NM	NM	NM	NM	4176.51		NM	4139.43		4158.09				NM
11/29/05	4154.17	4174.1	NM	4181.82	Dry		Dry	4155.06		4159(1)		4161(1)			NM
12/18/07	Dry	Dry	Dry	4165.54	Dry		Dry	4155.04		4159(1)		4164(1)			4162(1)
1/21/09	4153.12	Dry	NM	4165.75(2)	?(3)		4177(1)(4)	NM		4159(1)		4164(1)			4163(1)
6/1/09	NM	NM	NM	4172.02	NM		NM	NM		4163(1)		4170(1)			4170(1)
10/26/09	NM	NM	NM	4165.23	NM		NM	NM		4160(1)		4164(1)			4163(1)
2/26/10	NM	NM	Dry	4165.44	4160.07		4177(1)	4154.52		4159(1)		NM(5)			4162(1)
6/21/10	NM	NM	NM	4172.91	4171.36		4190(1)	4169.97		4180(1)		NM(5)			4172(1)
10/25/10	NM	NM		4169.50	4166.84					4161(1)			4168(1)	4167(1)	4168(1)
5/23/11	NM	NM		4179.62	4178.04					4183(1)			4172(1)	Flowing(1)(6)	4179(1)
10/17/11	NM	NM		4171.25	4168.30					4160(1)			4175(1)	Flowing(1)(6)	4171(1)
5/22/12	NM	NM		4174.09	4172.42					4166(1)			4176(1)	Flowing(1)(6)	4173(1)
10/23/12	NM	NM		4166.19	NM					4159(1)			4173(1)	4164(1)	4165(1)

Notes:
NM = Not measured
[ ] = Well not present.
(1) Reference elevation estimated from topographic contours (5ft) and field observations
(2) Deeper than tape, 2 ft. of water in well, DTW calculated from TD recorded 12/18/07
(3) Deeper than tape, DTW unknown
(4) 3 in. of water in well, DTW calculated from TD
(5) Well damaged, measurement not possible.
(6) Well flowing artesian at time of measurement, top of casing elevation 4169ft

Figure B-1: Static Water Levels in Shallow Wells

The reference elevations for MW-7R, MW-9R, and MW-10R are estimated from topographic contours and field observations.

Figure B-2: Static Water Levels in Deep Wells

APPENDIX C: LABORATORY QA/QC SUMMARY REPORT

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/23/12 12:35
DateReceived: 10/25/12
Matrix: Trip Blank

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-007
Client Sample ID TB 10/12/12 EM HCL 2765 2848

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/30/12 15:34 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/30/12 15:34 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/30/12 15:34 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/30/12 15:34 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/30/12 15:34 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-007
Client Sample ID TB 10/12/12 EM HCL 2765 2848

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/23/12 12:35
DateReceived: 10/25/12
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/30/12 15:34 / abb
Surr: 1,2-Dichloroethane-d4	90.0	%REC		69.7-142		SW8260B	10/30/12 15:34 / abb
Surr: Dibromofluoromethane	104	%REC		69.9-128		SW8260B	10/30/12 15:34 / abb
Surr: p-Bromofluorobenzene	96.0	%REC		83.7-119		SW8260B	10/30/12 15:34 / abb
Surr: Toluene-d8	97.0	%REC		75.5-125		SW8260B	10/30/12 15:34 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B									Analytical Run: PHSC_101-H_121025A	
Sample ID: SC 2ND 1000		Initial Calibration Verification Standard							10/25/12 12:58	
Conductivity @ 25 C		1000	umhos/cm	1.0	100	90	110			
Method: A2510 B									Batch: R83963	
Sample ID: SC 150		Initial Calibration Verification Standard				Run: PHSC_101-H_121025A			10/25/12 12:51	
Conductivity @ 25 C		143	umhos/cm	1.0	95	90	110			
Sample ID: SC 5000		Initial Calibration Verification Standard				Run: PHSC_101-H_121025A			10/25/12 12:54	
Conductivity @ 25 C		4990	umhos/cm	1.0	100	90	110			
Sample ID: SC 20000		Initial Calibration Verification Standard				Run: PHSC_101-H_121025A			10/25/12 12:56	
Conductivity @ 25 C		20000	umhos/cm	1.0	100	90	110			
Sample ID: H12100414-001ADUP		Sample Duplicate				Run: PHSC_101-H_121025A			10/25/12 15:15	
Conductivity @ 25 C		2940	umhos/cm	1.0				0.0	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B									Analytical Run: PHSC_101-H_121025A	
Sample ID: pH 7		Initial Calibration Verification Standard							10/25/12 12:49	
pH		7.0	s.u.	0.1	100	98	102			
Method: A4500-H B									Batch: R83963	
Sample ID: H12100414-001ADUP		Sample Duplicate				Run: PHSC_101-H_121025A			10/25/12 15:15	
pH		7.8	s.u.	0.1				0.3	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC102-H_121026A	
Sample ID: ICV102612-12	2	Initial Calibration Verification Standard							10/26/12 12:01	
Chloride		100	mg/L	1.0	104	90	110			
Sulfate		410	mg/L	1.0	103	90	110			
Sample ID: CCV102612-58	2	Continuing Calibration Verification Standard							10/26/12 19:18	
Chloride		100	mg/L	1.0	104	90	110			
Sulfate		420	mg/L	1.0	104	90	110			
Method: E300.0									Batch: R84032	
Sample ID: ICB102612-13	2	Method Blank				Run: IC102-H_121026A			10/26/12 12:14	
Chloride		ND	mg/L	0.03						
Sulfate		ND	mg/L	0.1						
Sample ID: LFB102612-14	2	Laboratory Fortified Blank				Run: IC102-H_121026A			10/26/12 12:26	
Chloride		51	mg/L	1.0	102	90	110			
Sulfate		210	mg/L	1.0	104	90	110			
Sample ID: H12100422-006AMS	2	Sample Matrix Spike				Run: IC102-H_121026A			10/26/12 16:21	
Chloride		56	mg/L	1.0	106	90	110			
Sulfate		250	mg/L	1.0	110	90	110			
Sample ID: H12100422-006AMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_121026A			10/26/12 16:34	
Chloride		56	mg/L	1.0	105	90	110	0.4	20	
Sulfate		250	mg/L	1.0	110	90	110	0.3	20	
Sample ID: H12100436-016AMS	2	Sample Matrix Spike				Run: IC102-H_121026A			10/26/12 21:36	
Chloride		84	mg/L	1.0	108	90	110			
Sulfate		220	mg/L	1.0	106	90	110			
Sample ID: H12100436-016AMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_121026A			10/26/12 21:49	
Chloride		84	mg/L	1.0	107	90	110	0.2	20	
Sulfate		220	mg/L	1.0	106	90	110	0.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA203-HE_121026B	
Sample ID: ICV		Initial Calibration Verification Standard								10/26/12 11:58
Nitrogen, Nitrate+Nitrite as N		0.993	mg/L	0.010	99	90	110			
Sample ID: ICB		Initial Calibration Blank, Instrument Blank								10/26/12 12:03
Nitrogen, Nitrate+Nitrite as N		-0.00496	mg/L	0.010		0	0			
Sample ID: CCV		Continuing Calibration Verification Standard								10/26/12 12:22
Nitrogen, Nitrate+Nitrite as N		0.504	mg/L	0.010	101	90	110			
Method: E353.2										Batch: R84000
Sample ID: LFB		Laboratory Fortified Blank				Run: FIA203-HE_121026B				10/26/12 11:59
Nitrogen, Nitrate+Nitrite as N		1.00	mg/L	0.010	100	90	110			
Sample ID: MBLK		Method Blank				Run: FIA203-HE_121026B				10/26/12 12:04
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.002						
Sample ID: H12100415-002AMS		Sample Matrix Spike				Run: FIA203-HE_121026B				10/26/12 12:27
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110			
Sample ID: H12100415-002AMSD		Sample Matrix Spike Duplicate				Run: FIA203-HE_121026B				10/26/12 12:28
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110	0.5	20	
Sample ID: H12100435-001GMS		Sample Matrix Spike				Run: FIA203-HE_121026B				10/26/12 12:41
Nitrogen, Nitrate+Nitrite as N		0.985	mg/L	0.010	98	90	110			
Sample ID: H12100435-001GMSD		Sample Matrix Spike Duplicate				Run: FIA203-HE_121026B				10/26/12 12:42
Nitrogen, Nitrate+Nitrite as N		0.989	mg/L	0.010	99	90	110	0.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Analytical Run: ICPMS204-B_121031A
Sample ID: ICV STD	16	Initial Calibration Verification Standard								10/31/12 12:08
Antimony		0.0493	mg/L	0.0010	99	90	110			
Arsenic		0.0461	mg/L	0.0010	92	90	110			
Barium		0.0505	mg/L	0.0010	101	90	110			
Beryllium		0.0243	mg/L	0.0010	97	90	110			
Cadmium		0.0254	mg/L	0.0010	102	90	110			
Chromium		0.0487	mg/L	0.0010	97	90	110			
Cobalt		0.0495	mg/L	0.0010	99	90	110			
Copper		0.0508	mg/L	0.0010	102	90	110			
Iron		0.267	mg/L	0.0010	107	90	110			
Lead		0.0481	mg/L	0.0010	96	90	110			
Nickel		0.0497	mg/L	0.0010	99	90	110			
Selenium		0.0475	mg/L	0.0010	95	90	110			
Silver		0.0225	mg/L	0.0010	90	90	110			
Thallium		0.0487	mg/L	0.0010	97	90	110			
Vanadium		0.0494	mg/L	0.0010	99	90	110			
Zinc		0.0508	mg/L	0.0010	102	90	110			
Sample ID: ICV STD	16	Initial Calibration Verification Standard								11/02/12 12:00
Antimony		0.0506	mg/L	0.0010	101	90	110			
Arsenic		0.0495	mg/L	0.0010	99	90	110			
Barium		0.0511	mg/L	0.0010	102	90	110			
Beryllium		0.0245	mg/L	0.0010	98	90	110			
Cadmium		0.0249	mg/L	0.0010	100	90	110			
Chromium		0.0507	mg/L	0.0010	101	90	110			
Cobalt		0.0504	mg/L	0.0010	101	90	110			
Copper		0.0522	mg/L	0.0010	104	90	110			
Iron		0.256	mg/L	0.0010	102	90	110			
Lead		0.0492	mg/L	0.0010	98	90	110			
Nickel		0.0514	mg/L	0.0010	103	90	110			
Selenium		0.0498	mg/L	0.0010	100	90	110			
Silver		0.0255	mg/L	0.0010	102	90	110			
Thallium		0.0498	mg/L	0.0010	100	90	110			
Vanadium		0.0504	mg/L	0.0010	101	90	110			
Zinc		0.0517	mg/L	0.0010	103	90	110			
Sample ID: ICV STD	16	Initial Calibration Verification Standard								11/03/12 01:48
Antimony		0.0525	mg/L	0.0010	105	90	110			
Arsenic		0.0495	mg/L	0.0010	99	90	110			
Barium		0.0517	mg/L	0.0010	103	90	110			
Beryllium		0.0253	mg/L	0.0010	101	90	110			
Cadmium		0.0257	mg/L	0.0010	103	90	110			
Chromium		0.0500	mg/L	0.0010	100	90	110			
Cobalt		0.0517	mg/L	0.0010	103	90	110			
Copper		0.0510	mg/L	0.0010	102	90	110			
Iron		0.255	mg/L	0.0010	102	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS204-B_121031A	
Sample ID: ICV STD	16	Initial Calibration Verification Standard							11/03/12 01:48	
Lead		0.0499	mg/L	0.0010	100	90	110			
Nickel		0.0509	mg/L	0.0010	102	90	110			
Selenium		0.0511	mg/L	0.0010	102	90	110			
Silver		0.0260	mg/L	0.0010	104	90	110			
Thallium		0.0500	mg/L	0.0010	100	90	110			
Vanadium		0.0498	mg/L	0.0010	100	90	110			
Zinc		0.0520	mg/L	0.0010	104	90	110			
Method: SW6020									Batch: R84148	
Sample ID: ICB	16	Method Blank				Run: ICPMS204-B_121031A			10/31/12 15:16	
Antimony		3E-05	mg/L	1E-05						
Arsenic		ND	mg/L	5E-05						
Barium		ND	mg/L	5E-05						
Beryllium		ND	mg/L	2E-05						
Cadmium		ND	mg/L	5E-06						
Chromium		ND	mg/L	2E-05						
Cobalt		ND	mg/L	0.0002						
Copper		ND	mg/L	2E-05						
Iron		0.0004	mg/L	0.0002						
Lead		ND	mg/L	1E-05						
Nickel		0.0001	mg/L	4E-05						
Selenium		ND	mg/L	4E-05						
Silver		ND	mg/L	3E-05						
Thallium		ND	mg/L	8E-06						
Vanadium		ND	mg/L	1E-05						
Zinc		0.0005	mg/L	0.0004						
Sample ID: LFB	16	Laboratory Fortified Blank				Run: ICPMS204-B_121031A			10/31/12 15:20	
Antimony		0.0475	mg/L	0.0010	95	80	120			
Arsenic		0.0514	mg/L	0.0010	103	80	120			
Barium		0.0496	mg/L	0.0010	99	80	120			
Beryllium		0.0480	mg/L	0.0010	96	80	120			
Cadmium		0.0474	mg/L	0.0010	95	80	120			
Chromium		0.0508	mg/L	0.0010	102	80	120			
Cobalt		0.0477	mg/L	0.0010	95	80	120			
Copper		0.0499	mg/L	0.0010	100	80	120			
Iron		5.04	mg/L	0.0010	101	80	120			
Lead		0.0485	mg/L	0.0010	97	80	120			
Nickel		0.0500	mg/L	0.0010	100	80	120			
Selenium		0.0518	mg/L	0.0010	104	80	120			
Silver		0.0176	mg/L	0.0010	88	80	120			
Thallium		0.0482	mg/L	0.0010	96	80	120			
Vanadium		0.0514	mg/L	0.0010	103	80	120			
Zinc		0.0510	mg/L	0.0010	101	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R84148
Sample ID: H12100422-001CMS	16	Sample Matrix Spike				Run: ICPMS204-B_121031A				11/02/12 06:34
Antimony		0.0477	mg/L	0.0010	95	75	125			
Arsenic		0.0508	mg/L	0.0010	101	75	125			
Barium		0.114	mg/L	0.050	91	75	125			
Beryllium		0.0495	mg/L	0.0010	99	75	125			
Cadmium		0.0467	mg/L	0.0010	93	75	125			
Chromium		0.0481	mg/L	0.0050	96	75	125			
Cobalt		0.0480	mg/L	0.0050	96	75	125			
Copper		0.0481	mg/L	0.0050	95	75	125			
Iron		4.84	mg/L	0.030	97	75	125			
Lead		0.0472	mg/L	0.0010	94	75	125			
Nickel		0.0489	mg/L	0.0050	95	75	125			
Selenium		0.0518	mg/L	0.0010	103	75	125			
Silver		0.0169	mg/L	0.0010	85	75	125			
Thallium		0.0470	mg/L	0.00050	94	75	125			
Vanadium		0.0481	mg/L	0.010	96	75	125			
Zinc		0.0611	mg/L	0.010	97	75	125			
Sample ID: H12100422-001CMSD	16	Sample Matrix Spike Duplicate				Run: ICPMS204-B_121031A				11/02/12 06:39
Antimony		0.0494	mg/L	0.0010	99	75	125	3.5	20	
Arsenic		0.0509	mg/L	0.0010	102	75	125	0.2	20	
Barium		0.116	mg/L	0.050	96	75	125	2.1	20	
Beryllium		0.0508	mg/L	0.0010	102	75	125	2.5	20	
Cadmium		0.0473	mg/L	0.0010	95	75	125	1.2	20	
Chromium		0.0480	mg/L	0.0050	96	75	125	0.2	20	
Cobalt		0.0488	mg/L	0.0050	98	75	125	1.7	20	
Copper		0.0482	mg/L	0.0050	95	75	125	0.0	20	
Iron		4.98	mg/L	0.030	99	75	125	2.9	20	
Lead		0.0485	mg/L	0.0010	97	75	125	2.6	20	
Nickel		0.0490	mg/L	0.0050	95	75	125	0.2	20	
Selenium		0.0525	mg/L	0.0010	105	75	125	1.2	20	
Silver		0.0167	mg/L	0.0010	83	75	125	1.5	20	
Thallium		0.0482	mg/L	0.00050	96	75	125	2.5	20	
Vanadium		0.0489	mg/L	0.010	98	75	125	1.7	20	
Zinc		0.0615	mg/L	0.010	97	75	125	0.6	20	
Sample ID: LFB	16	Laboratory Fortified Blank				Run: ICPMS204-B_121031A				11/03/12 02:30
Antimony		0.0518	mg/L	0.0010	103	80	120			
Arsenic		0.0517	mg/L	0.0010	103	80	120			
Barium		0.0519	mg/L	0.0010	104	80	120			
Beryllium		0.0496	mg/L	0.0010	99	80	120			
Cadmium		0.0501	mg/L	0.0010	100	80	120			
Chromium		0.0511	mg/L	0.0010	102	80	120			
Cobalt		0.0502	mg/L	0.0010	100	80	120			
Copper		0.0490	mg/L	0.0010	98	80	120			
Iron		4.84	mg/L	0.0010	97	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R84148
Sample ID: LFB	16	Laboratory Fortified Blank				Run: ICPMS204-B_121031A				11/03/12 02:30
Lead		0.0513	mg/L	0.0010	102	80	120			
Nickel		0.0502	mg/L	0.0010	100	80	120			
Selenium		0.0519	mg/L	0.0010	104	80	120			
Silver		0.0202	mg/L	0.0010	101	80	120			
Thallium		0.0511	mg/L	0.0010	102	80	120			
Vanadium		0.0511	mg/L	0.0010	102	80	120			
Zinc		0.0521	mg/L	0.0010	101	80	120			
Sample ID: H12100422-001CMS	16	Sample Matrix Spike				Run: ICPMS204-B_121031A				11/03/12 02:44
Antimony		0.0526	mg/L	0.0010	105	75	125			
Arsenic		0.0518	mg/L	0.0010	103	75	125			
Barium		0.124	mg/L	0.050	99	75	125			
Beryllium		0.0502	mg/L	0.0010	100	75	125			
Cadmium		0.0491	mg/L	0.0010	98	75	125			
Chromium		0.0512	mg/L	0.0050	102	75	125			
Cobalt		0.0503	mg/L	0.0050	101	75	125			
Copper		0.0501	mg/L	0.0050	99	75	125			
Iron		4.73	mg/L	0.030	94	75	125			
Lead		0.0508	mg/L	0.0010	101	75	125			
Nickel		0.0509	mg/L	0.0050	99	75	125			
Selenium		0.0509	mg/L	0.0010	101	75	125			
Silver		0.0184	mg/L	0.0010	92	75	125			
Thallium		0.0503	mg/L	0.00050	101	75	125			
Vanadium		0.0510	mg/L	0.010	102	75	125			
Zinc		0.0632	mg/L	0.010	100	75	125			
Sample ID: H12100422-001CMSD	16	Sample Matrix Spike Duplicate				Run: ICPMS204-B_121031A				11/03/12 02:48
Antimony		0.0516	mg/L	0.0010	103	75	125	2.0	20	
Arsenic		0.0521	mg/L	0.0010	104	75	125	0.7	20	
Barium		0.124	mg/L	0.050	99	75	125	0.2	20	
Beryllium		0.0496	mg/L	0.0010	99	75	125	1.3	20	
Cadmium		0.0490	mg/L	0.0010	98	75	125	0.2	20	
Chromium		0.0511	mg/L	0.0050	102	75	125	0.2	20	
Cobalt		0.0500	mg/L	0.0050	100	75	125	0.7	20	
Copper		0.0493	mg/L	0.0050	97	75	125	1.6	20	
Iron		4.90	mg/L	0.030	98	75	125	3.6	20	
Lead		0.0502	mg/L	0.0010	100	75	125	1.2	20	
Nickel		0.0507	mg/L	0.0050	99	75	125	0.6	20	
Selenium		0.0533	mg/L	0.0010	106	75	125	4.7	20	
Silver		0.0182	mg/L	0.0010	91	75	125	1.3	20	
Thallium		0.0501	mg/L	0.00050	100	75	125	0.4	20	
Vanadium		0.0512	mg/L	0.010	102	75	125	0.3	20	
Zinc		0.0631	mg/L	0.010	100	75	125	0.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R84148
Sample ID: H12100448-003BMS	15	Sample Matrix Spike				Run: ICPMS204-B_121031A				11/03/12 04:03
Antimony		0.0579	mg/L	0.0010	116	75	125			
Arsenic		0.0527	mg/L	0.0010	104	75	125			
Barium		0.214	mg/L	0.050	119	75	125			
Beryllium		0.0502	mg/L	0.0010	100	75	125			
Cadmium		0.0477	mg/L	0.0010	95	75	125			
Chromium		0.0530	mg/L	0.0050	104	75	125			
Cobalt		0.0521	mg/L	0.0050	104	75	125			
Copper		0.0514	mg/L	0.0050	98	75	125			
Iron		5.52	mg/L	0.030	95	75	125			
Lead		0.0535	mg/L	0.0010	105	75	125			
Nickel		0.0525	mg/L	0.0050	98	75	125			
Selenium		0.0481	mg/L	0.0010	96	75	125			
Thallium		0.0521	mg/L	0.00050	104	75	125			
Vanadium		0.0523	mg/L	0.010	104	75	125			
Zinc		0.0724	mg/L	0.010	102	75	125			
Sample ID: H12100448-003BMSD	15	Sample Matrix Spike Duplicate				Run: ICPMS204-B_121031A				11/03/12 04:26
Antimony		0.0572	mg/L	0.0010	114	75	125	1.2	20	
Arsenic		0.0539	mg/L	0.0010	106	75	125	2.3	20	
Barium		0.212	mg/L	0.050	113	75	125	1.4	20	
Beryllium		0.0520	mg/L	0.0010	104	75	125	3.6	20	
Cadmium		0.0482	mg/L	0.0010	96	75	125	1.2	20	
Chromium		0.0531	mg/L	0.0050	105	75	125	0.2	20	
Cobalt		0.0530	mg/L	0.0050	105	75	125	1.7	20	
Copper		0.0526	mg/L	0.0050	101	75	125	2.3	20	
Iron		5.65	mg/L	0.030	97	75	125	2.3	20	
Lead		0.0546	mg/L	0.0010	107	75	125	1.9	20	
Nickel		0.0530	mg/L	0.0050	99	75	125	1.0	20	
Selenium		0.0490	mg/L	0.0010	98	75	125	1.9	20	
Thallium		0.0528	mg/L	0.00050	105	75	125	1.3	20	
Vanadium		0.0527	mg/L	0.010	105	75	125	0.7	20	
Zinc		0.0725	mg/L	0.010	103	75	125	0.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R84048
Sample ID: CCV102612A	54	Continuing Calibration Verification Standard								10/26/12 09:01
trans-1,4-Dichloro-2-butene		4.96	ug/L	1.0	99	70	130			
Acetone		42.8	ug/L	20	86	70	130			
Acrylonitrile		44.8	ug/L	20	90	70	130			
Benzene		5.28	ug/L	1.0	106	70	130			
Bromochloromethane		5.08	ug/L	1.0	102	70	130			
Bromodichloromethane		4.96	ug/L	1.0	99	70	130			
Bromoform		4.60	ug/L	1.0	92	70	130			
Bromomethane		6.40	ug/L	1.0	128	70	130			
Carbon disulfide		5.24	ug/L	1.0	105	70	130			
Carbon tetrachloride		5.64	ug/L	1.0	113	70	130			
Chlorobenzene		5.40	ug/L	1.0	108	70	130			
Chlorodibromomethane		4.80	ug/L	1.0	96	70	130			
Chloroethane		5.80	ug/L	1.0	116	70	130			
Chloroform		5.00	ug/L	1.0	100	80	120			
Chloromethane		6.00	ug/L	1.0	120	70	130			
1,2-Dibromo-3-chloropropane		4.32	ug/L	1.0	86	70	130			
1,2-Dibromoethane		4.44	ug/L	1.0	89	70	130			
Dibromomethane		5.04	ug/L	1.0	101	70	130			
1,2-Dichlorobenzene		5.08	ug/L	1.0	102	70	130			
1,4-Dichlorobenzene		5.00	ug/L	1.0	100	70	130			
Dichlorodifluoromethane		5.56	ug/L	1.0	111	70	130			
1,1-Dichloroethane		5.04	ug/L	1.0	101	70	130			
1,2-Dichloroethane		4.80	ug/L	1.0	96	70	130			
1,1-Dichloroethene		5.08	ug/L	1.0	102	80	120			
cis-1,2-Dichloroethene		4.68	ug/L	1.0	94	70	130			
trans-1,2-Dichloroethene		5.16	ug/L	1.0	103	70	130			
1,2-Dichloropropane		5.32	ug/L	1.0	106	80	120			
cis-1,3-Dichloropropene		5.32	ug/L	1.0	106	70	130			
trans-1,3-Dichloropropene		5.32	ug/L	1.0	106	70	130			
Ethylbenzene		5.88	ug/L	1.0	118	80	120			
2-Hexanone		50.8	ug/L	20	102	70	130			
Iodomethane		5.00	ug/L	1.0	100	70	130			
Methyl ethyl ketone		38.7	ug/L	20	77	70	130			
Methyl isobutyl ketone		50.4	ug/L	20	101	70	130			
Methylene chloride		4.96	ug/L	1.0	99	70	130			
Styrene		5.36	ug/L	1.0	107	70	130			
1,1,1,2-Tetrachloroethane		5.12	ug/L	1.0	102	70	130			
1,1,2,2-Tetrachloroethane		4.40	ug/L	1.0	88	70	130			
Tetrachloroethene		6.08	ug/L	1.0	122	70	130			
Toluene		5.68	ug/L	1.0	114	80	120			
1,1,1-Trichloroethane		5.48	ug/L	1.0	110	70	130			
1,1,2-Trichloroethane		5.00	ug/L	1.0	100	70	130			
Trichloroethene		6.00	ug/L	1.0	120	70	130			
Trichlorofluoromethane		5.36	ug/L	1.0	107	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R84048
Sample ID: CCV102612A	54	Continuing Calibration Verification Standard								10/26/12 09:01
1,2,3-Trichloropropane		4.36	ug/L	1.0	87	70	130			
Vinyl acetate		3.98	ug/L	1.0	80	70	130			
Vinyl chloride		5.48	ug/L	1.0	110	80	120			
m+p-Xylenes		12.0	ug/L	1.0	120	70	130			
o-Xylene		5.76	ug/L	1.0	115	70	130			
Xylenes, Total		17.8	ug/L	1.0	118	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	86	69.7	142			
Surr: Dibromofluoromethane				1.0	97	69.9	128			
Surr: p-Bromofluorobenzene				1.0	92	83.7	119			
Surr: Toluene-d8				1.0	103	75.5	125			
Method: SW8260B										Batch: R84048
Sample ID: LCS102612A	54	Laboratory Control Sample				Run: 1SATURN_121026A				10/26/12 09:37
trans-1,4-Dichloro-2-butene		4.92	ug/L	1.0	98	70	123			
Acetone		40.0	ug/L	20	80	57.3	142			
Acrylonitrile		43.6	ug/L	20	87	73.2	133			
Benzene		5.40	ug/L	1.0	108	73.7	125			
Bromochloromethane		5.04	ug/L	1.0	101	64.6	125			
Bromodichloromethane		5.20	ug/L	1.0	104	70.9	126			
Bromoform		4.68	ug/L	1.0	94	68.7	120			
Bromomethane		6.28	ug/L	1.0	126	43.5	144			
Carbon disulfide		5.24	ug/L	1.0	105	62.5	149			
Carbon tetrachloride		5.68	ug/L	1.0	114	68.8	123			
Chlorobenzene		5.28	ug/L	1.0	106	78.3	121			
Chlorodibromomethane		4.48	ug/L	1.0	90	69.7	118			
Chloroethane		5.80	ug/L	1.0	116	49.1	152			
Chloroform		4.96	ug/L	1.0	99	67.6	124			
Chloromethane		6.08	ug/L	1.0	122	67.9	134			
1,2-Dibromo-3-chloropropane		4.48	ug/L	1.0	90	58.2	138			
1,2-Dibromoethane		4.16	ug/L	1.0	83	70.6	114			
Dibromomethane		5.28	ug/L	1.0	106	64.2	126			
1,2-Dichlorobenzene		5.04	ug/L	1.0	101	78	125			
1,4-Dichlorobenzene		5.20	ug/L	1.0	104	78.1	117			
Dichlorodifluoromethane		5.60	ug/L	1.0	112	65.6	148			
1,1-Dichloroethane		5.24	ug/L	1.0	105	73	130			
1,2-Dichloroethane		4.56	ug/L	1.0	91	71	137			
1,1-Dichloroethene		5.44	ug/L	1.0	109	59.3	137			
cis-1,2-Dichloroethene		4.92	ug/L	1.0	98	78.3	122			
trans-1,2-Dichloroethene		5.20	ug/L	1.0	104	69.3	128			
1,2-Dichloropropane		5.24	ug/L	1.0	105	72.3	140			
cis-1,3-Dichloropropene		5.40	ug/L	1.0	108	77	125			
trans-1,3-Dichloropropene		5.00	ug/L	1.0	100	74.7	123			
Ethylbenzene		5.64	ug/L	1.0	113	75.5	130			
2-Hexanone		47.6	ug/L	20	95	72.6	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84048
Sample ID: LCS102612A	54	Laboratory Control Sample				Run: 1SATURN_121026A				10/26/12 09:37
Iodomethane		4.00	ug/L	1.0	80	41.4	130			
Methyl ethyl ketone		37.0	ug/L	20	74	57.5	140			
Methyl isobutyl ketone		48.0	ug/L	20	96	72.7	124			
Methylene chloride		4.60	ug/L	1.0	92	63.1	131			
Styrene		5.20	ug/L	1.0	104	77.2	119			
1,1,1,2-Tetrachloroethane		4.96	ug/L	1.0	99	74	119			
1,1,2,2-Tetrachloroethane		4.36	ug/L	1.0	87	77.6	120			
Tetrachloroethene		6.00	ug/L	1.0	120	72.6	127			
Toluene		5.64	ug/L	1.0	113	65.3	130			
1,1,1-Trichloroethane		5.72	ug/L	1.0	114	72.2	121			
1,1,2-Trichloroethane		4.60	ug/L	1.0	92	74.7	128			
Trichloroethene		5.68	ug/L	1.0	114	69	129			
Trichlorofluoromethane		5.24	ug/L	1.0	105	54.8	141			
1,2,3-Trichloropropane		4.56	ug/L	1.0	91	62.5	131			
Vinyl acetate		4.96	ug/L	1.0	99	72.1	156			
Vinyl chloride		5.16	ug/L	1.0	103	77.7	132			
m+p-Xylenes		11.1	ug/L	1.0	111	76.4	125			
o-Xylene		5.60	ug/L	1.0	112	73.5	127			
Xylenes, Total		16.7	ug/L	1.0	111	37.8	157			
Surr: 1,2-Dichloroethane-d4				1.0	88	69.7	142			
Surr: Dibromofluoromethane				1.0	95	69.9	128			
Surr: p-Bromofluorobenzene				1.0	100	83.7	119			
Surr: Toluene-d8				1.0	104	75.5	125			
Sample ID: MB102612A	54	Method Blank				Run: 1SATURN_121026A				10/26/12 11:12
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84048
Sample ID: MB102612A	54	Method Blank				Run: 1SATURN_121026A				10/26/12 11:12
1,4-Dichlorobenzene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	87	69.7	142			
Surr: Dibromofluoromethane				1.0	98	69.9	128			
Surr: p-Bromofluorobenzene				1.0	95	83.7	119			
Surr: Toluene-d8				1.0	91	75.5	125			
Sample ID: H12100434-001BMS	54	Sample Matrix Spike				Run: 1SATURN_121026A				10/26/12 19:18
trans-1,4-Dichloro-2-butene		9.52	ug/L	1.0	95	70	123			
Acetone		83.2	ug/L	40	83	57.3	142			
Acrylonitrile		108	ug/L	40	108	73.2	133			
Benzene		10.4	ug/L	1.0	104	73.7	125			
Bromochloromethane		9.76	ug/L	1.0	98	64.6	125			
Bromodichloromethane		9.92	ug/L	1.0	99	70.9	126			
Bromoform		8.64	ug/L	1.0	86	68.7	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84048
Sample ID: H12100434-001BMS	54	Sample Matrix Spike				Run: 1SATURN_121026A				10/26/12 19:18
Bromomethane		14.5	ug/L	1.0	145	43.5	144			S
Carbon disulfide		12.2	ug/L	1.0	122	62.5	149			
Carbon tetrachloride		10.5	ug/L	1.0	105	68.8	123			
Chlorobenzene		10.2	ug/L	1.0	102	78.3	121			
Chlorodibromomethane		8.96	ug/L	1.0	90	69.7	118			
Chloroethane		10.7	ug/L	1.0	107	49.1	152			
Chloroform		10.4	ug/L	1.0	97	67.6	124			
Chloromethane		12.0	ug/L	1.0	120	67.9	134			
1,2-Dibromo-3-chloropropane		8.48	ug/L	1.0	85	58.2	138			
1,2-Dibromoethane		8.24	ug/L	1.0	82	70.6	114			
Dibromomethane		9.20	ug/L	1.0	92	64.2	126			
1,2-Dichlorobenzene		9.44	ug/L	1.0	94	78	125			
1,4-Dichlorobenzene		10.1	ug/L	1.0	101	78.1	117			
Dichlorodifluoromethane		12.1	ug/L	1.0	121	65.6	148			
1,1-Dichloroethane		11.3	ug/L	1.0	113	73	130			
1,2-Dichloroethane		9.44	ug/L	1.0	94	71	137			
1,1-Dichloroethene		10.2	ug/L	1.0	102	59.3	137			
cis-1,2-Dichloroethene		10.7	ug/L	1.0	107	78.3	122			
trans-1,2-Dichloroethene		10.7	ug/L	1.0	107	69.3	128			
1,2-Dichloropropane		9.52	ug/L	1.0	95	72.3	140			
cis-1,3-Dichloropropene		9.52	ug/L	1.0	95	77	125			
trans-1,3-Dichloropropene		9.84	ug/L	1.0	98	74.7	123			
Ethylbenzene		10.3	ug/L	1.0	103	75.5	130			
2-Hexanone		100	ug/L	40	100	72.6	127			
Iodomethane		8.64	ug/L	1.0	86	41.4	130			
Methyl ethyl ketone		91.2	ug/L	40	86	57.5	140			
Methyl isobutyl ketone		100	ug/L	40	100	72.7	124			
Methylene chloride		9.36	ug/L	1.0	94	63.1	131			
Styrene		9.20	ug/L	1.0	92	77.2	119			
1,1,1,2-Tetrachloroethane		9.76	ug/L	1.0	98	74	119			
1,1,2,2-Tetrachloroethane		9.12	ug/L	1.0	91	77.6	120			
Tetrachloroethene		12.2	ug/L	1.0	103	72.6	127			
Toluene		9.92	ug/L	1.0	99	65.3	130			
1,1,1-Trichloroethane		10.7	ug/L	1.0	107	72.2	121			
1,1,2-Trichloroethane		8.96	ug/L	1.0	90	74.7	128			
Trichloroethene		10.5	ug/L	1.0	105	69	129			
Trichlorofluoromethane		11.2	ug/L	1.0	112	54.8	141			
1,2,3-Trichloropropane		8.16	ug/L	1.0	82	62.5	131			
Vinyl acetate		12.3	ug/L	1.0	123	72.1	156			
Vinyl chloride		10.1	ug/L	1.0	101	77.7	132			
m+p-Xylenes		21.4	ug/L	1.0	107	76.4	125			
o-Xylene		10.8	ug/L	1.0	108	73.5	127			
Xylenes, Total		32.2	ug/L	2.0	107	37.8	157			
Surr: 1,2-Dichloroethane-d4				2.0	92	69.7	142			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84048
Sample ID: H12100434-001BMS	54	Sample Matrix Spike				Run: 1SATURN_121026A			10/26/12 19:18	
Surr: Dibromofluoromethane				2.0	97	69.9	128			
Surr: p-Bromofluorobenzene				2.0	97	83.7	119			
Surr: Toluene-d8				2.0	97	75.5	125			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										
Sample ID: H12100434-001BMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_121026A			10/26/12 19:48	
trans-1,4-Dichloro-2-butene		9.68	ug/L	1.0	97	70	123	1.7	20	
Acetone		85.6	ug/L	40	86	57.3	142	2.8	20	
Acrylonitrile		108	ug/L	40	108	73.2	133	0.0	20	
Benzene		10.5	ug/L	1.0	105	73.7	125	0.8	20	
Bromochloromethane		10.2	ug/L	1.0	102	64.6	125	4.8	20	
Bromodichloromethane		9.36	ug/L	1.0	94	70.9	126	5.8	20	
Bromoform		9.20	ug/L	1.0	92	68.7	120	6.3	20	
Bromomethane		14.5	ug/L	1.0	145	43.5	144	0.0	20	S
Carbon disulfide		12.7	ug/L	1.0	127	62.5	149	4.5	20	
Carbon tetrachloride		10.5	ug/L	1.0	105	68.8	123	0.0	20	
Chlorobenzene		10.3	ug/L	1.0	103	78.3	121	0.8	20	
Chlorodibromomethane		8.88	ug/L	1.0	89	69.7	118	0.9	20	
Chloroethane		11.3	ug/L	1.0	113	49.1	152	5.1	20	
Chloroform		10.3	ug/L	1.0	97	67.6	124	0.8	20	
Chloromethane		12.2	ug/L	1.0	122	67.9	134	1.3	20	
1,2-Dibromo-3-chloropropane		8.88	ug/L	1.0	89	58.2	138	4.6	20	
1,2-Dibromoethane		8.40	ug/L	1.0	84	70.6	114	1.9	20	
Dibromomethane		8.96	ug/L	1.0	90	64.2	126	2.6	20	
1,2-Dichlorobenzene		10.2	ug/L	1.0	102	78	125	8.1	20	
1,4-Dichlorobenzene		10.2	ug/L	1.0	102	78.1	117	1.6	20	
Dichlorodifluoromethane		13.2	ug/L	1.0	132	65.6	148	8.9	20	
1,1-Dichloroethane		11.1	ug/L	1.0	111	73	130	1.4	20	
1,2-Dichloroethane		9.12	ug/L	1.0	91	71	137	3.4	20	
1,1-Dichloroethene		10.9	ug/L	1.0	109	59.3	137	6.8	20	
cis-1,2-Dichloroethene		10.2	ug/L	1.0	102	78.3	122	4.6	20	
trans-1,2-Dichloroethene		10.8	ug/L	1.0	108	69.3	128	0.7	20	
1,2-Dichloropropane		9.20	ug/L	1.0	92	72.3	140	3.4	20	
cis-1,3-Dichloropropene		9.60	ug/L	1.0	96	77	125	0.8	20	
trans-1,3-Dichloropropene		9.76	ug/L	1.0	98	74.7	123	0.8	20	
Ethylbenzene		10.6	ug/L	1.0	106	75.5	130	2.3	20	
2-Hexanone		104	ug/L	40	104	72.6	127	3.9	20	
Iodomethane		8.96	ug/L	1.0	90	41.4	130	3.6	20	
Methyl ethyl ketone		88.0	ug/L	40	82	57.5	140	3.6	20	
Methyl isobutyl ketone		100	ug/L	40	100	72.7	124	0.0	20	
Methylene chloride		9.76	ug/L	1.0	98	63.1	131	4.2	20	
Styrene		10.3	ug/L	1.0	103	77.2	119	11	20	
1,1,1,2-Tetrachloroethane		9.44	ug/L	1.0	94	74	119	3.3	20	
1,1,2,2-Tetrachloroethane		8.56	ug/L	1.0	86	77.6	120	6.3	20	
Tetrachloroethene		12.4	ug/L	1.0	105	72.6	127	1.3	20	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12

Client: MT-DEQ Solid Waste Section

Report Date: 11/13/12

Project: Mister M Landfill

Work Order: H12100422

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84048
Sample ID: H12100434-001BMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_121026A			10/26/12 19:48	
Toluene		10.0	ug/L	1.0	100	65.3	130	0.8	20	
1,1,1-Trichloroethane		11.1	ug/L	1.0	111	72.2	121	3.7	20	
1,1,2-Trichloroethane		9.12	ug/L	1.0	91	74.7	128	1.8	20	
Trichloroethene		9.44	ug/L	1.0	94	69	129	10	20	
Trichlorofluoromethane		10.7	ug/L	1.0	107	54.8	141	4.4	20	
1,2,3-Trichloropropane		8.40	ug/L	1.0	84	62.5	131	2.9	20	
Vinyl acetate		12.6	ug/L	1.0	126	72.1	156	1.9	20	
Vinyl chloride		10.7	ug/L	1.0	107	77.7	132	6.2	20	
m+p-Xylenes		21.9	ug/L	1.0	110	76.4	125	2.6	20	
o-Xylene		10.9	ug/L	1.0	109	73.5	127	0.7	20	
Xylenes, Total		32.8	ug/L	2.0	109	37.8	157	2.0	20	
Surr: 1,2-Dichloroethane-d4				2.0	92	69.7	142			
Surr: Dibromofluoromethane				2.0	99	69.9	128			
Surr: p-Bromofluorobenzene				2.0	98	83.7	119			
Surr: Toluene-d8				2.0	95	75.5	125			

- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R84069
Sample ID: CCV103012A	54	Continuing Calibration Verification Standard								10/30/12 09:08
trans-1,4-Dichloro-2-butene		4.84	ug/L	1.0	97	70	130			
Acetone		41.6	ug/L	20	83	70	130			
Acrylonitrile		53.6	ug/L	20	107	70	130			
Benzene		5.08	ug/L	1.0	102	70	130			
Bromochloromethane		4.80	ug/L	1.0	96	70	130			
Bromodichloromethane		4.64	ug/L	1.0	93	70	130			
Bromoform		4.40	ug/L	1.0	88	70	130			
Bromomethane		6.52	ug/L	1.0	130	70	130			
Carbon disulfide		5.28	ug/L	1.0	106	70	130			
Carbon tetrachloride		5.40	ug/L	1.0	108	70	130			
Chlorobenzene		5.08	ug/L	1.0	102	70	130			
Chlorodibromomethane		4.24	ug/L	1.0	85	70	130			
Chloroethane		5.28	ug/L	1.0	106	70	130			
Chloroform		4.84	ug/L	1.0	97	80	120			
Chloromethane		5.84	ug/L	1.0	117	70	130			
1,2-Dibromo-3-chloropropane		4.16	ug/L	1.0	83	70	130			
1,2-Dibromoethane		4.20	ug/L	1.0	84	70	130			
Dibromomethane		4.36	ug/L	1.0	87	70	130			
1,2-Dichlorobenzene		4.68	ug/L	1.0	94	70	130			
1,4-Dichlorobenzene		5.04	ug/L	1.0	101	70	130			
Dichlorodifluoromethane		5.88	ug/L	1.0	118	70	130			
1,1-Dichloroethane		5.48	ug/L	1.0	110	70	130			
1,2-Dichloroethane		4.28	ug/L	1.0	86	70	130			
1,1-Dichloroethene		5.48	ug/L	1.0	110	80	120			
cis-1,2-Dichloroethene		4.96	ug/L	1.0	99	70	130			
trans-1,2-Dichloroethene		5.68	ug/L	1.0	114	70	130			
1,2-Dichloropropane		4.28	ug/L	1.0	86	80	120			
cis-1,3-Dichloropropene		4.72	ug/L	1.0	94	70	130			
trans-1,3-Dichloropropene		4.56	ug/L	1.0	91	70	130			
Ethylbenzene		5.28	ug/L	1.0	106	80	120			
2-Hexanone		48.0	ug/L	20	96	70	130			
Iodomethane		5.08	ug/L	1.0	102	70	130			
Methyl ethyl ketone		41.2	ug/L	20	82	70	130			
Methyl isobutyl ketone		45.6	ug/L	20	91	70	130			
Methylene chloride		5.28	ug/L	1.0	106	70	130			
Styrene		4.92	ug/L	1.0	98	70	130			
1,1,1,2-Tetrachloroethane		4.72	ug/L	1.0	94	70	130			
1,1,2,2-Tetrachloroethane		4.24	ug/L	1.0	85	70	130			
Tetrachloroethene		5.20	ug/L	1.0	104	70	130			
Toluene		5.08	ug/L	1.0	102	80	120			
1,1,1-Trichloroethane		5.44	ug/L	1.0	109	70	130			
1,1,2-Trichloroethane		4.16	ug/L	1.0	83	70	130			
Trichloroethene		5.00	ug/L	1.0	100	70	130			
Trichlorofluoromethane		5.60	ug/L	1.0	112	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12

Client: MT-DEQ Solid Waste Section

Report Date: 11/13/12

Project: Mister M Landfill

Work Order: H12100422

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R84069
Sample ID: CCV103012A	54	Continuing Calibration Verification Standard								10/30/12 09:08
1,2,3-Trichloropropane		4.16	ug/L	1.0	83	70	130			
Vinyl acetate		4.24	ug/L	1.0	85	70	130			
Vinyl chloride		5.96	ug/L	1.0	119	80	120			
m+p-Xylenes		10.7	ug/L	1.0	107	70	130			
o-Xylene		5.20	ug/L	1.0	104	70	130			
Xylenes, Total		15.9	ug/L	1.0	106	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	86	69.7	142			
Surr: Dibromofluoromethane				1.0	95	69.9	128			
Surr: p-Bromofluorobenzene				1.0	98	83.7	119			
Surr: Toluene-d8				1.0	96	75.5	125			
Method: SW8260B										Batch: R84069
Sample ID: LCS103012A	54	Laboratory Control Sample				Run: 1SATURN_121030A				10/30/12 09:48
trans-1,4-Dichloro-2-butene		4.68	ug/L	1.0	94	70	123			
Acetone		39.4	ug/L	20	79	57.3	142			
Acrylonitrile		46.4	ug/L	20	93	73.2	133			
Benzene		5.32	ug/L	1.0	106	73.7	125			
Bromochloromethane		4.84	ug/L	1.0	97	64.6	125			
Bromodichloromethane		4.56	ug/L	1.0	91	70.9	126			
Bromoform		4.44	ug/L	1.0	89	68.7	120			
Bromomethane		7.52	ug/L	1.0	150	43.5	144			S
Carbon disulfide		6.56	ug/L	1.0	131	62.5	149			
Carbon tetrachloride		5.76	ug/L	1.0	115	68.8	123			
Chlorobenzene		5.12	ug/L	1.0	102	78.3	121			
Chlorodibromomethane		4.40	ug/L	1.0	88	69.7	118			
Chloroethane		5.92	ug/L	1.0	118	49.1	152			
Chloroform		4.88	ug/L	1.0	98	67.6	124			
Chloromethane		5.72	ug/L	1.0	114	67.9	134			
1,2-Dibromo-3-chloropropane		4.32	ug/L	1.0	86	58.2	138			
1,2-Dibromoethane		4.16	ug/L	1.0	83	70.6	114			
Dibromomethane		4.60	ug/L	1.0	92	64.2	126			
1,2-Dichlorobenzene		4.80	ug/L	1.0	96	78	125			
1,4-Dichlorobenzene		5.04	ug/L	1.0	101	78.1	117			
Dichlorodifluoromethane		6.80	ug/L	1.0	136	65.6	148			
1,1-Dichloroethane		5.40	ug/L	1.0	108	73	130			
1,2-Dichloroethane		4.44	ug/L	1.0	89	71	137			
1,1-Dichloroethene		5.24	ug/L	1.0	105	59.3	137			
cis-1,2-Dichloroethene		5.16	ug/L	1.0	103	78.3	122			
trans-1,2-Dichloroethene		5.40	ug/L	1.0	108	69.3	128			
1,2-Dichloropropane		4.56	ug/L	1.0	91	72.3	140			
cis-1,3-Dichloropropene		4.88	ug/L	1.0	98	77	125			
trans-1,3-Dichloropropene		4.56	ug/L	1.0	91	74.7	123			
Ethylbenzene		5.44	ug/L	1.0	109	75.5	130			
2-Hexanone		44.8	ug/L	20	90	72.6	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84069
Sample ID: LCS103012A	54	Laboratory Control Sample				Run: 1SATURN_121030A				10/30/12 09:48
Iodomethane		4.32	ug/L	1.0	86	41.4	130			
Methyl ethyl ketone		40.8	ug/L	20	82	57.5	140			
Methyl isobutyl ketone		42.0	ug/L	20	84	72.7	124			
Methylene chloride		5.04	ug/L	1.0	101	63.1	131			
Styrene		5.20	ug/L	1.0	104	77.2	119			
1,1,1,2-Tetrachloroethane		5.04	ug/L	1.0	101	74	119			
1,1,2,2-Tetrachloroethane		4.48	ug/L	1.0	90	77.6	120			
Tetrachloroethene		5.44	ug/L	1.0	109	72.6	127			
Toluene		5.20	ug/L	1.0	104	65.3	130			
1,1,1-Trichloroethane		5.72	ug/L	1.0	114	72.2	121			
1,1,2-Trichloroethane		4.40	ug/L	1.0	88	74.7	128			
Trichloroethene		5.60	ug/L	1.0	112	69	129			
Trichlorofluoromethane		5.56	ug/L	1.0	111	54.8	141			
1,2,3-Trichloropropane		4.32	ug/L	1.0	86	62.5	131			
Vinyl acetate		5.96	ug/L	1.0	119	72.1	156			
Vinyl chloride		5.68	ug/L	1.0	114	77.7	132			
m+p-Xylenes		11.2	ug/L	1.0	112	76.4	125			
o-Xylene		5.56	ug/L	1.0	111	73.5	127			
Xylenes, Total		16.8	ug/L	1.0	112	37.8	157			
Surr: 1,2-Dichloroethane-d4				1.0	90	69.7	142			
Surr: Dibromofluoromethane				1.0	98	69.9	128			
Surr: p-Bromofluorobenzene				1.0	99	83.7	119			
Surr: Toluene-d8				1.0	99	75.5	125			
Sample ID: MB103012A	54	Method Blank				Run: 1SATURN_121030A				10/30/12 11:01
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84069
Sample ID: MB103012A	54	Method Blank				Run: 1SATURN_121030A				10/30/12 11:01
1,4-Dichlorobenzene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	88	69.7	142			
Surr: Dibromofluoromethane				1.0	102	69.9	128			
Surr: p-Bromofluorobenzene				1.0	96	83.7	119			
Surr: Toluene-d8				1.0	92	75.5	125			
Sample ID: H12100422-004CMS	54	Sample Matrix Spike				Run: 1SATURN_121030A				10/30/12 19:40
trans-1,4-Dichloro-2-butene		11.0	ug/L	1.0	110	70	123			
Acetone		87.2	ug/L	40	87	57.3	142			
Acrylonitrile		99.2	ug/L	40	99	73.2	133			
Benzene		10.8	ug/L	1.0	108	73.7	125			
Bromochloromethane		10.1	ug/L	1.0	101	64.6	125			
Bromodichloromethane		10.0	ug/L	1.0	100	70.9	126			
Bromoform		9.36	ug/L	1.0	94	68.7	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84069
Sample ID: H12100422-004CMS	54	Sample Matrix Spike				Run: 1SATURN_121030A				10/30/12 19:40
Bromomethane		8.96	ug/L	1.0	90	43.5	144			
Carbon disulfide		12.4	ug/L	1.0	124	62.5	149			
Carbon tetrachloride		10.7	ug/L	1.0	107	68.8	123			
Chlorobenzene		10.2	ug/L	1.0	102	78.3	121			
Chlorodibromomethane		8.96	ug/L	1.0	90	69.7	118			
Chloroethane		9.68	ug/L	1.0	97	49.1	152			
Chloroform		9.76	ug/L	1.0	98	67.6	124			
Chloromethane		9.12	ug/L	1.0	91	67.9	134			
1,2-Dibromo-3-chloropropane		9.76	ug/L	1.0	98	58.2	138			
1,2-Dibromoethane		8.88	ug/L	1.0	89	70.6	114			
Dibromomethane		9.76	ug/L	1.0	98	64.2	126			
1,2-Dichlorobenzene		10.5	ug/L	1.0	105	78	125			
1,4-Dichlorobenzene		10.2	ug/L	1.0	102	78.1	117			
Dichlorodifluoromethane		12.5	ug/L	1.0	125	65.6	148			
1,1-Dichloroethane		10.2	ug/L	1.0	102	73	130			
1,2-Dichloroethane		10.6	ug/L	1.0	106	71	137			
1,1-Dichloroethene		10.3	ug/L	1.0	103	59.3	137			
cis-1,2-Dichloroethene		12.4	ug/L	1.0	96	78.3	122			
trans-1,2-Dichloroethene		10.1	ug/L	1.0	101	69.3	128			
1,2-Dichloropropane		10.5	ug/L	1.0	105	72.3	140			
cis-1,3-Dichloropropene		10.1	ug/L	1.0	101	77	125			
trans-1,3-Dichloropropene		9.68	ug/L	1.0	97	74.7	123			
Ethylbenzene		10.4	ug/L	1.0	101	75.5	130			
2-Hexanone		97.6	ug/L	40	98	72.6	127			
Iodomethane		8.80	ug/L	1.0	88	41.4	130			
Methyl ethyl ketone		82.4	ug/L	40	82	57.5	140			
Methyl isobutyl ketone		102	ug/L	40	102	72.7	124			
Methylene chloride		9.76	ug/L	1.0	98	63.1	131			
Styrene		9.92	ug/L	1.0	94	77.2	119			
1,1,1,2-Tetrachloroethane		9.52	ug/L	1.0	95	74	119			
1,1,2,2-Tetrachloroethane		9.92	ug/L	1.0	99	77.6	120			
Tetrachloroethene		10.6	ug/L	1.0	106	72.6	127			
Toluene		10.1	ug/L	1.0	101	65.3	130			
1,1,1-Trichloroethane		10.6	ug/L	1.0	106	72.2	121			
1,1,2-Trichloroethane		9.12	ug/L	1.0	91	74.7	128			
Trichloroethene		11.2	ug/L	1.0	112	69	129			
Trichlorofluoromethane		11.0	ug/L	1.0	110	54.8	141			
1,2,3-Trichloropropane		9.36	ug/L	1.0	94	62.5	131			
Vinyl acetate		12.1	ug/L	1.0	121	72.1	156			
Vinyl chloride		10.2	ug/L	1.0	102	77.7	132			
m+p-Xylenes		20.7	ug/L	1.0	104	76.4	125			
o-Xylene		10.1	ug/L	1.0	101	73.5	127			
Xylenes, Total		30.9	ug/L	2.0	103	37.8	157			
Surr: 1,2-Dichloroethane-d4				2.0	90	69.7	142			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Work Order: H12100422

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84069
Sample ID: H12100422-004CMS	54	Sample Matrix Spike				Run: 1SATURN_121030A			10/30/12 19:40	
Surr: Dibromofluoromethane				2.0	94	69.9	128			
Surr: p-Bromofluorobenzene				2.0	98	83.7	119			
Surr: Toluene-d8				2.0	91	75.5	125			
Sample ID: H12100422-004CMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_121030A			11/01/12 12:16	
trans-1,4-Dichloro-2-butene		10.9	ug/L	1.0	109	70	123	1.5	20	
Acetone		103	ug/L	40	103	57.3	142	17	20	
Acrylonitrile		102	ug/L	40	102	73.2	133	3.2	20	
Benzene		10.6	ug/L	1.0	106	73.7	125	1.5	20	
Bromochloromethane		10.2	ug/L	1.0	102	64.6	125	0.8	20	
Bromodichloromethane		10.1	ug/L	1.0	101	70.9	126	0.8	20	
Bromoform		9.92	ug/L	1.0	99	68.7	120	5.8	20	
Bromomethane		11.6	ug/L	1.0	116	43.5	144	26	20	R
Carbon disulfide		11.6	ug/L	1.0	116	62.5	149	6.7	20	
Carbon tetrachloride		10.6	ug/L	1.0	106	68.8	123	0.7	20	
Chlorobenzene		10.1	ug/L	1.0	101	78.3	121	1.6	20	
Chlorodibromomethane		9.20	ug/L	1.0	92	69.7	118	2.6	20	
Chloroethane		10.3	ug/L	1.0	103	49.1	152	6.4	20	
Chloroform		10.2	ug/L	1.0	102	67.6	124	4.0	20	
Chloromethane		10.5	ug/L	1.0	105	67.9	134	14	20	
1,2-Dibromo-3-chloropropane		9.12	ug/L	1.0	91	58.2	138	6.8	20	
1,2-Dibromoethane		8.72	ug/L	1.0	87	70.6	114	1.8	20	
Dibromomethane		9.52	ug/L	1.0	95	64.2	126	2.5	20	
1,2-Dichlorobenzene		10.2	ug/L	1.0	102	78	125	2.3	20	
1,4-Dichlorobenzene		11.0	ug/L	1.0	110	78.1	117	6.8	20	
Dichlorodifluoromethane		12.2	ug/L	1.0	122	65.6	148	2.6	20	
1,1-Dichloroethane		11.3	ug/L	1.0	113	73	130	10	20	
1,2-Dichloroethane		9.60	ug/L	1.0	96	71	137	9.5	20	
1,1-Dichloroethene		10.7	ug/L	1.0	107	59.3	137	3.8	20	
cis-1,2-Dichloroethene		13.0	ug/L	1.0	102	78.3	122	5.0	20	
trans-1,2-Dichloroethene		10.6	ug/L	1.0	106	69.3	128	4.7	20	
1,2-Dichloropropane		10.4	ug/L	1.0	104	72.3	140	0.8	20	
cis-1,3-Dichloropropene		10.0	ug/L	1.0	100	77	125	0.8	20	
trans-1,3-Dichloropropene		9.68	ug/L	1.0	97	74.7	123	0.0	20	
Ethylbenzene		11.1	ug/L	1.0	108	75.5	130	6.7	20	
2-Hexanone		118	ug/L	40	118	72.6	127	19	20	
Iodomethane		8.24	ug/L	1.0	82	41.4	130	6.6	20	
Methyl ethyl ketone		107	ug/L	40	107	57.5	140	26	20	R
Methyl isobutyl ketone		115	ug/L	40	115	72.7	124	13	20	
Methylene chloride		9.76	ug/L	1.0	98	63.1	131	0.0	20	
Styrene		11.1	ug/L	1.0	106	77.2	119	11	20	
1,1,1,2-Tetrachloroethane		10.7	ug/L	1.0	107	74	119	12	20	
1,1,2,2-Tetrachloroethane		9.20	ug/L	1.0	92	77.6	120	7.5	20	
Tetrachloroethene		11.0	ug/L	1.0	110	72.6	127	3.7	20	

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Revised Date: 11/14/12

Client: MT-DEQ Solid Waste Section

Report Date: 11/13/12

Project: Mister M Landfill

Work Order: H12100422

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R84069
Sample ID: H12100422-004CMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_121030A			11/01/12 12:16	
Toluene		10.2	ug/L	1.0	102	65.3	130	0.8	20	
1,1,1-Trichloroethane		11.2	ug/L	1.0	112	72.2	121	5.1	20	
1,1,2-Trichloroethane		9.36	ug/L	1.0	94	74.7	128	2.6	20	
Trichloroethene		10.3	ug/L	1.0	103	69	129	8.2	20	
Trichlorofluoromethane		10.4	ug/L	1.0	104	54.8	141	5.2	20	
1,2,3-Trichloropropane		9.68	ug/L	1.0	97	62.5	131	3.4	20	
Vinyl acetate		12.8	ug/L	1.0	128	72.1	156	5.8	20	
Vinyl chloride		10.2	ug/L	1.0	102	77.7	132	0.0	20	
m+p-Xylenes		22.2	ug/L	1.0	111	76.4	125	7.1	20	
o-Xylene		11.0	ug/L	1.0	110	73.5	127	9.1	20	
Xylenes, Total		33.3	ug/L	2.0	111	37.8	157	7.5	20	
Surr: 1,2-Dichloroethane-d4				2.0	90	69.7	142			
Surr: Dibromofluoromethane				2.0	97	69.9	128			
Surr: p-Bromofluorobenzene				2.0	98	83.7	119			
Surr: Toluene-d8				2.0	98	75.5	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Workorder Receipt Checklist

MT-DEQ Solid Waste Section H12100422

Login completed by: Tracy L. Lorash
Date Received: 10/25/2012
Reviewed by: BL2000\kwiegand
Received by: TLL
Reviewed Date: 10/29/2012
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	6.0°C No Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☑	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

The following vial(s) were received with headspace: Vial 1 of 3 for MrM-MW-HW had a 1/4 inch bubble. Vial 1 of 3 for MrM-MW-11 had a 5/16 inch bubble. Vial 1 of 3 for MrM-MW-9R had a 1/8 inch bubble. Vial 1 of 3 for MrM-MW-OW had a 2mm bubble and vial 2 of 3 had a 1/8 inch bubble. Vial 1 of 3 for MrM-MW-12-Dup had a 1/8 inch bubble. TI 10/25/12.

ENERGY

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: MT DEQ Solid Waste	Project Name, PWS, Permit, Etc.: Mister M Landfill	Sample Origin State: MT	EPA/State Compliance: Yes ☒ No ☐
Report Mail Address: PO Box 200901, Helena, MT 59620	Contact Name: Martin Van Oort Phone/Fax: 444-2802	Email: mvanoort@mt.gov	Sampler: (Please Print) Martin Van Oort
Invoice Address: Same	Invoice Contact & Phone: Same	Purchase Order: Mister M	Quote/Bottle Order: 10869

Special Report/Formats:

- ☐ DW
- ☐ POTW/WWTP
- ☒ State: Solid Waste
- ☐ Other: _____
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

ANALYSIS REQUESTED

Standard Turnaround (TAT) — RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Please use reporting limits from state circular DEQ-7 for all samples.

Shipped by: Hand

Cooler ID(s): Y

Receipt Temp: 6.0 °C/B

On Ice: Y (N)

Custody Seal: On Bottle Y (N); On Cooler Y (N)

Intact: Y N

Signature Match: Y N

#	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water)	8260 VOCs	pH, Cond, Cl⁻, SO₄²⁻	Nitrate + Nitrite	Dissolved Metals (All)	Fe & Zn						SEE ATTACHED
1	M-M-MW-HW	10/23/12	1235	GW	X	X	X	X							
2	M-M-MW-11	10/23/12	1515	GW	X	X	X	X							
3	M-M-MW-9R	10/24/12	845	SW	X	X	X								
4	M-M-MW-OW	10/24/12	1140	SW	X	X			X						
5	M-M-MW-12	10/24/12	1610	GW	X	X	X	X							
6	M-M-MW-12-DUP	10/24/12	1615	GW	X	X	X	X							
7	Trip Blank				X										
8															
9															
10															

LABORATORY USE ONLY: H12100422

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
[illegible]	10/25/12 1230	Martin Van Oort			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Tracey Lovell	Date/Time: 10/25/12 12:30	Signature: Tracey Lovell

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

APPENDIX D: LABORATORY ANALYTICAL REPORT

ANALYTICAL SUMMARY REPORT

November 14, 2012

MT-DEQ Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12100422 Quote ID: H667 - Landfill Parameters

Project Name: Mister M Landfill

Energy Laboratories Inc Helena MT received the following 7 samples for MT-DEQ Solid Waste Section on 10/25/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12100422-001	MrM-MW-HW	10/23/12 12:35	10/25/12	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H12100422-002	MrM-MW-11	10/23/12 15:15	10/25/12	Aqueous	Same As Above
H12100422-003	MrM-MW-9R	10/24/12 8:45	10/25/12	Aqueous	Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H12100422-004	MrM-MW-OW	10/24/12 11:40	10/25/12	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H12100422-005	MrM-MW-12	10/24/12 16:10	10/25/12	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H12100422-006	MrM-MW-12-Dup	10/24/12 16:15	10/25/12	Aqueous	Same As Above
H12100422-007	TB 10/12/12 EM HCL 2765 2848	10/23/12 12:35	10/25/12	Trip Blank	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

RECEIVED
NOV 14 2012
DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

Report Approved By: Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2012.11.14 14:19:34 -07:00

CLIENT: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Sample Delivery Group: H12100422

Revised Date: 11/14/12
Report Date: 11/13/12

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Martin Van Oort contacted Energy Laboratories Inc stating he did not request Mercury analyzed. Requested Mercury results be removed. Attached is the revised report. Wj 11/14/12

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-001
Client Sample ID MrM-MW-HW

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/23/12 12:35
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.	H	0.1		A4500-H B	10/25/12 15:22 / cmm
Conductivity @ 25 C	782	umhos/cm		1		A2510 B	10/25/12 15:22 / cmm
INORGANICS							
Chloride	6	mg/L		1		E300.0	10/26/12 14:07 / cmm
Sulfate	35	mg/L		1		E300.0	10/26/12 14:07 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/26/12 12:31 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	11/02/12 06:30 / dck
Arsenic	ND	mg/L		0.001		SW6020	11/02/12 06:30 / dck
Barium	0.068	mg/L		0.003		SW6020	11/02/12 06:30 / dck
Beryllium	ND	mg/L		0.0008		SW6020	11/02/12 06:30 / dck
Cadmium	ND	mg/L		0.00003		SW6020	11/02/12 06:30 / dck
Chromium	ND	mg/L		0.01		SW6020	11/02/12 06:30 / dck
Cobalt	ND	mg/L		0.01		SW6020	11/02/12 06:30 / dck
Copper	ND	mg/L		0.002		SW6020	11/02/12 06:30 / dck
Iron	ND	mg/L		0.02		SW6020	11/02/12 06:30 / dck
Lead	ND	mg/L		0.0003		SW6020	11/02/12 06:30 / dck
Nickel	ND	mg/L		0.002		SW6020	11/02/12 06:30 / dck
Selenium	ND	mg/L		0.001		SW6020	11/02/12 06:30 / dck
Silver	ND	mg/L		0.0002		SW6020	11/03/12 02:39 / dck
Thallium	ND	mg/L		0.0002		SW6020	11/02/12 06:30 / dck
Vanadium	ND	mg/L		0.1		SW6020	11/02/12 06:30 / dck
Zinc	0.013	mg/L		0.008		SW6020	11/02/12 06:30 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/26/12 18:17 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/26/12 18:17 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-001
Client Sample ID MrM-MW-HW

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/23/12 12:35
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/26/12 18:17 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/26/12 18:17 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/26/12 18:17 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/26/12 18:17 / abb
Surr: 1,2-Dichloroethane-d4	92.0	%REC		69.7-142		SW8260B	10/26/12 18:17 / abb
Surr: Dibromofluoromethane	97.0	%REC		69.9-128		SW8260B	10/26/12 18:17 / abb
Surr: p-Bromofluorobenzene	96.0	%REC		83.7-119		SW8260B	10/26/12 18:17 / abb
Surr: Toluene-d8	90.0	%REC		75.5-125		SW8260B	10/26/12 18:17 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-002
Client Sample ID MrM-MW-11

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/23/12 15:15
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.	H	0.1		A4500-H B	10/25/12 15:24 / cmm
Conductivity @ 25 C	649	umhos/cm		1		A2510 B	10/25/12 15:24 / cmm
INORGANICS							
Chloride	2	mg/L		1		E300.0	10/26/12 14:43 / cmm
Sulfate	42	mg/L		1		E300.0	10/26/12 14:43 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/26/12 12:33 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	11/02/12 06:48 / dck
Arsenic	ND	mg/L		0.001		SW6020	11/02/12 06:48 / dck
Barium	0.035	mg/L		0.003		SW6020	11/02/12 06:48 / dck
Beryllium	ND	mg/L		0.0008		SW6020	11/02/12 06:48 / dck
Cadmium	ND	mg/L		0.00003		SW6020	11/02/12 06:48 / dck
Chromium	ND	mg/L		0.01		SW6020	11/02/12 06:48 / dck
Cobalt	ND	mg/L		0.01		SW6020	11/02/12 06:48 / dck
Copper	ND	mg/L		0.002		SW6020	11/02/12 06:48 / dck
Iron	0.22	mg/L		0.02		SW6020	11/02/12 06:48 / dck
Lead	ND	mg/L		0.0003		SW6020	11/02/12 06:48 / dck
Nickel	ND	mg/L		0.002		SW6020	11/02/12 06:48 / dck
Selenium	ND	mg/L		0.001		SW6020	11/02/12 06:48 / dck
Silver	ND	mg/L		0.0002		SW6020	11/03/12 02:58 / dck
Thallium	ND	mg/L		0.0002		SW6020	11/02/12 06:48 / dck
Vanadium	ND	mg/L		0.1		SW6020	11/02/12 06:48 / dck
Zinc	ND	mg/L		0.008		SW6020	11/02/12 06:48 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/26/12 18:47 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/26/12 18:47 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-002
Client Sample ID MrM-MW-11

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/23/12 15:15
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/26/12 18:47 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/26/12 18:47 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/26/12 18:47 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/26/12 18:47 / abb
Surr: 1,2-Dichloroethane-d4	89.0	%REC		69.7-142		SW8260B	10/26/12 18:47 / abb
Surr: Dibromofluoromethane	106	%REC		69.9-128		SW8260B	10/26/12 18:47 / abb
Surr: p-Bromofluorobenzene	86.0	%REC		83.7-119		SW8260B	10/26/12 18:47 / abb
Surr: Toluene-d8	94.0	%REC		75.5-125		SW8260B	10/26/12 18:47 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-003
Client Sample ID MrM-MW-9R

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 08:45
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.	H	0.1		A4500-H B	10/25/12 15:27 / cmm
Conductivity @ 25 C	974	umhos/cm		1		A2510 B	10/25/12 15:27 / cmm
INORGANICS							
Chloride	21	mg/L		1		E300.0	10/26/12 22:27 / cmm
Sulfate	58	mg/L		1		E300.0	10/26/12 22:27 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	1.94	mg/L	D	0.02		E353.2	10/26/12 12:34 / reh
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/30/12 17:37 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/30/12 17:37 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
cis-1,2-Dichloroethene	5.7	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/30/12 17:37 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-003
Client Sample ID MrM-MW-9R

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 08:45
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/30/12 17:37 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/30/12 17:37 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Tetrachloroethene	0.42	ug/L	J	1.0		SW8260B	10/30/12 17:37 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/30/12 17:37 / abb
Surr: 1,2-Dichloroethane-d4	92.0	%REC		69.7-142		SW8260B	10/30/12 17:37 / abb
Surr: Dibromofluoromethane	101	%REC		69.9-128		SW8260B	10/30/12 17:37 / abb
Surr: p-Bromofluorobenzene	92.0	%REC		83.7-119		SW8260B	10/30/12 17:37 / abb
Surr: Toluene-d8	98.0	%REC		75.5-125		SW8260B	10/30/12 17:37 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-004
Client Sample ID MrM-MW-OW

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 11:40
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.	H	0.1		A4500-H B	10/25/12 15:29 / cmm
Conductivity @ 25 C	709	umhos/cm		1		A2510 B	10/25/12 15:29 / cmm
INORGANICS							
Chloride	4	mg/L		1		E300.0	10/26/12 15:44 / cmm
Sulfate	32	mg/L		1		E300.0	10/26/12 15:44 / cmm
METALS, DISSOLVED							
Iron	1.14	mg/L		0.02		SW6020	11/02/12 06:53 / dck
Zinc	1.26	mg/L		0.008		SW6020	11/02/12 06:53 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/30/12 16:05 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/30/12 16:05 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
cis-1,2-Dichloroethene	2.8	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Ethylbenzene	0.28	ug/L	J	1.0		SW8260B	10/30/12 16:05 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/30/12 16:05 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than th reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-004
Client Sample ID MrM-MW-OW

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 11:40
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Iodomethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/30/12 16:05 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/30/12 16:05 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Styrene	0.54	ug/L	J	1.0		SW8260B	10/30/12 16:05 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/30/12 16:05 / abb
Surr: 1,2-Dichloroethane-d4	89.0	%REC		69.7-142		SW8260B	10/30/12 16:05 / abb
Surr: Dibromofluoromethane	98.0	%REC		69.9-128		SW8260B	10/30/12 16:05 / abb
Surr: p-Bromofluorobenzene	96.0	%REC		83.7-119		SW8260B	10/30/12 16:05 / abb
Surr: Toluene-d8	93.0	%REC		75.5-125		SW8260B	10/30/12 16:05 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-005
Client Sample ID MrM-MW-12

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 16:10
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.	H	0.1		A4500-H B	10/25/12 15:31 / cmm
Conductivity @ 25 C	697	umhos/cm		1		A2510 B	10/25/12 15:31 / cmm
INORGANICS							
Chloride	3	mg/L		1		E300.0	10/26/12 15:56 / cmm
Sulfate	32	mg/L		1		E300.0	10/26/12 15:56 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/26/12 12:35 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	11/02/12 06:58 / dck
Arsenic	0.001	mg/L		0.001		SW6020	11/02/12 06:58 / dck
Barium	0.028	mg/L		0.003		SW6020	11/02/12 06:58 / dck
Beryllium	ND	mg/L		0.0008		SW6020	11/02/12 06:58 / dck
Cadmium	ND	mg/L		0.00003		SW6020	11/02/12 06:58 / dck
Chromium	ND	mg/L		0.01		SW6020	11/02/12 06:58 / dck
Cobalt	ND	mg/L		0.01		SW6020	11/02/12 06:58 / dck
Copper	ND	mg/L		0.002		SW6020	11/02/12 06:58 / dck
Iron	0.61	mg/L		0.02		SW6020	11/02/12 06:58 / dck
Lead	ND	mg/L		0.0003		SW6020	11/02/12 06:58 / dck
Nickel	ND	mg/L		0.002		SW6020	11/02/12 06:58 / dck
Selenium	ND	mg/L		0.001		SW6020	11/02/12 06:58 / dck
Silver	ND	mg/L		0.0002		SW6020	11/03/12 03:02 / dck
Thallium	ND	mg/L		0.0002		SW6020	11/02/12 06:58 / dck
Vanadium	ND	mg/L		0.1		SW6020	11/02/12 06:58 / dck
Zinc	0.011	mg/L		0.008		SW6020	11/02/12 06:58 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/30/12 16:35 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/30/12 16:35 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-005
Client Sample ID MrM-MW-12

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 16:10
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/30/12 16:35 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/30/12 16:35 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/30/12 16:35 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/30/12 16:35 / abb
Surr: 1,2-Dichloroethane-d4	90.0	%REC		69.7-142		SW8260B	10/30/12 16:35 / abb
Surr: Dibromofluoromethane	101	%REC		69.9-128		SW8260B	10/30/12 16:35 / abb
Surr: p-Bromofluorobenzene	99.0	%REC		83.7-119		SW8260B	10/30/12 16:35 / abb
Surr: Toluene-d8	96.0	%REC		75.5-125		SW8260B	10/30/12 16:35 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-006
Client Sample ID MrM-MW-12-Dup

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 16:15
DateReceived: 10/25/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.	H	0.1		A4500-H B	10/25/12 15:34 / cmm
Conductivity @ 25 C	697	umhos/cm		1		A2510 B	10/25/12 15:34 / cmm
INORGANICS							
Chloride	3	mg/L		1		E300.0	10/26/12 16:09 / cmm
Sulfate	32	mg/L		1		E300.0	10/26/12 16:09 / cmm
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/26/12 12:36 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.0005		SW6020	11/02/12 07:02 / dck
Arsenic	0.001	mg/L		0.001		SW6020	11/02/12 07:02 / dck
Barium	0.028	mg/L		0.003		SW6020	11/02/12 07:02 / dck
Beryllium	ND	mg/L		0.0008		SW6020	11/02/12 07:02 / dck
Cadmium	ND	mg/L		0.00003		SW6020	11/02/12 07:02 / dck
Chromium	ND	mg/L		0.01		SW6020	11/02/12 07:02 / dck
Cobalt	ND	mg/L		0.01		SW6020	11/02/12 07:02 / dck
Copper	ND	mg/L		0.002		SW6020	11/02/12 07:02 / dck
Iron	0.60	mg/L		0.02		SW6020	11/02/12 07:02 / dck
Lead	ND	mg/L		0.0003		SW6020	11/02/12 07:02 / dck
Nickel	ND	mg/L		0.002		SW6020	11/02/12 07:02 / dck
Selenium	ND	mg/L		0.001		SW6020	11/02/12 07:02 / dck
Silver	ND	mg/L		0.0002		SW6020	11/03/12 03:26 / dck
Thallium	ND	mg/L		0.0002		SW6020	11/02/12 07:02 / dck
Vanadium	ND	mg/L		0.1		SW6020	11/02/12 07:02 / dck
Zinc	ND	mg/L		0.008		SW6020	11/02/12 07:02 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/30/12 17:06 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/30/12 17:06 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Revised Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 16:15
DateReceived: 10/25/12
Matrix: Aqueous

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12100422-006
Client Sample ID MrM-MW-12-Dup

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/30/12 17:06 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/30/12 17:06 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/30/12 17:06 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/30/12 17:06 / abb
Surr: 1,2-Dichloroethane-d4	91.0	%REC		69.7-142		SW8260B	10/30/12 17:06 / abb
Surr: Dibromofluoromethane	104	%REC		69.9-128		SW8260B	10/30/12 17:06 / abb
Surr: p-Bromofluorobenzene	94.0	%REC		83.7-119		SW8260B	10/30/12 17:06 / abb
Surr: Toluene-d8	100	%REC		75.5-125		SW8260B	10/30/12 17:06 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

APPENDIX E: HISTORICAL GROUNDWATER QUALITY

LABORATORY ANALYTICAL REPORT

Prepared by Weaver, MT Branch

Client: MT-DEQ 2000 Waste Sampling
Project: Mishe Wi Lake
Lab ID: H1210-422-003
Client Sample ID: MrM-NW-12 Dup

Reviewed Date: 11/14/12
Report Date: 11/13/12
Collection Date: 10/24/12 10:15
Date Received: 10/25/12
Matrix: Aqueous

Analyte	Result	Units	Qualifiers	RL	MDL / GCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,2-Dibromo-3-chloropropane	ND	ug/L		5.0		SW8260B	10/29/12 12:54 / WEB
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Dibromomethane	ND	ug/L		2.0		SW8260B	10/29/12 12:54 / WEB
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
2-Hexanone	ND	ug/L		5.0		SW8260B	10/29/12 12:54 / WEB
Methyl iodide	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Methyl isobutyl ketone	ND	ug/L		5.0		SW8260B	10/29/12 12:54 / WEB
Methyl ethyl ketone	ND	ug/L		5.0		SW8260B	10/29/12 12:54 / WEB
Methylene chloride	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Styrene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Toluene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Trichloroethene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
m-Xylene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
o-Xylene	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Xylene, Total	ND	ug/L		1.0		SW8260B	10/29/12 12:54 / WEB
Surr: 1,2-Dichloroethane-d4	91.0	%REC		70-130		SW8260B	10/29/12 12:54 / WEB
Surr: Dibromofluoromethane	103	%REC		70-130		SW8260B	10/29/12 12:54 / WEB
Surr: 4-Bromofluorobenzene	99.0	%REC		70-130		SW8260B	10/29/12 12:54 / WEB
Surr: Toluene-d8	100	%REC		70-130		SW8260B	10/29/12 12:54 / WEB

Report Qualifiers: ND - Analyte not detected above RL; MCL - Maximum Contaminant Level
Definitions: GCL - Groundwater Cleanup Level; RL - Reporting Limit

Well	Date	pH (std units)	SC (umhos/cm)	Chloride (mg/l)	Sulfate (mg/l)	Nitrate + Nitrite (mg/l)	Metals (mg/l)															
							Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-1	8/10/93	7.5	544	16	75	0.77		<0.005	0.1		<0.001	<0.01			<0.03	<0.01		<0.005	<0.005			
	12/8/95																					
	3/30/96	7.2	789	19	34	0.53	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	0.08	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.02
	11/21/03	7.6	684	13	28		<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.3	716	9	30	1.62	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	11/10/06	7.6	775	13	25	2.42	<0.01	<0.005	0.29	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	6/28/07	7.5	7.81	19	24	1.49	<0.01	<0.005	0.24	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	1/22/09	7.5	805	19	23	1.90	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
MW-2	8/10/93	6.9	823	47	52	<0.05		<0.005	0.2		<0.001	<0.01			<0.03	<0.01		<0.005	<0.005			
	6/28/07	7.3	946	54	60	0.21	<0.01	<0.005	0.14	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-4	8/10/93	7.8	721	28	51	0.43		<0.005	0.2		0.003	<0.01			<0.01	0.03		<0.005	<0.005			
	11/21/03	7.8	670	16	59	2.81	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
MW-5	11/21/03	7.7	718	5	68	2.72	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.054	<0.005	<0.1	<0.1	<0.01
	8/19/04	7.9	926	10	100	2.81	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.055	<0.005	<0.1	<0.1	0.02
	11/30/05	7.4	841	11	46	1.96	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.058	<0.005	<0.1	<0.1	<0.01
	11/9/06	7.6	969	5	43	2.66	<0.01	<0.005	0.11	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	0.184	<0.0002	<0.01	<0.05	<0.01
	6/27/07	7.7	937	7	50	1.89	<0.01	<0.005	0.11	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	0.124	<0.0002	<0.01	<0.05	<0.01
	12/19/07	7.6	880	9	49	1.70																
	6/3/09	7.6	1020	14	55	2.12	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.111	<0.005	<0.1	<0.1	<0.01
MW-6	6/27/07	7.6	1040	5	56	0.18	<0.01	<0.005	0.15	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-6M	8/20/04	7.9	388	4	20	1.68	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.06
MW-7	12/8/95																					
	3/30/96	6.8	942	34	40	<0.05	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	0.28	<0.01	0.01	<0.005	<0.005	<0.1	<0.10	0.02
MW-7R	6/28/07	7.3	1350	80	157	2.10	<0.01	<0.005	0.05	<0.001	<0.0005	<0.002	<0.005	0.002	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-8	11/21/03	7.3	743	17	38	1.03	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.4	746	10	50	2.64	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.08
MW-9	12/8/95																					
	3/30/96	7.4	734	13	26	<0.05	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.03
MW-9R	10/24/97	7.7	814	14	99	4.74	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
	8/20/04	7.6	760	10	90	5.58	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	6/2/09	7.5	952	24	75	3.47	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.0	922	14	82	4.04	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	10/26/10	8.1	896	17	68	2.95	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/11	7.2	882	25	36	1.52	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/11	7.2	892	25	36	1.52	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/18/11	7.4	994	28	56	0.93																
	5/23/12	7.0	1000	30	55	2.49																
	10/24/12	7.4	974	21	58	1.94																
MW-10	11/14/94	7.5	684	47	30	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.02

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	pH (std units)	SC (umhos/cm)	Chloride (mg/l)	Sulfate (mg/l)	Nitrate + Nitrite (mg/l)	Metals (mg/l)															
							Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-10	12/29/94																					
(cont.)	5/25/95	8.0	668	45	25	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.06
	12/8/95	7.4	646	15	30	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.08
	3/30/96	7.4	647	6	25	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.2	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.03
MW-10R	10/24/97	7.6	1100	23	111	2.01	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	0.034	<0.005	<0.1	<0.1	<0.01
	6/29/98	7.5	1130	18	99	1.7	0.04J	0.004J	<0.1	0.0009J	<0.001	<0.01	<0.01	<0.01	0.14	<0.01	<0.01	0.091	<0.005	<0.1	<0.1	0.02
	11/17/98	7.5	947	19	113	2.18	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.093	<0.005	<0.1	<0.1	<0.01J
	5/4/99	7.7	1070	19	104	1.85	<0.05	0.008	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.35	<0.01	<0.01	0.101	<0.005	<0.1	<0.1	0.02
	12/3/99	7.3	1070	14	112	2.01	<0.05	<0.005J	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	0.114	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.7	970	10	100	2.39	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.050	<0.005	<0.1	<0.1	0.07
	1/22/09	7.8	1080	17	89	1.63	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.060	<0.005	<0.1	<0.1	<0.01
	6/2/09	7.7	1020	23	82	1.42	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.011	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.0	1080	17	88	1.82	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.081	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.2	1080	17	88	1.95	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.071	<0.005	<0.1	<0.1	<0.01
MW-11	10/26/10	8.2	655	3	42	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/24/11	7.7	612	3	38	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.18	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/17/11	8.0	620	2	38	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.22	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/17/11	8.0	623	2	38	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.19	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/12	7.3	650	3	41	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.22	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/23/12	7.4	649	2	42	<0.01	<0.0005	<0.001	0.035	<0.0008	<0.00003	<0.01	<0.01	<0.002	0.22	<0.003	<0.002	<0.001	<0.0002	<0.0002	<0.1	<0.008
MW-11M	8/20/04	7.3	1110	20	70	2.36	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.08
MW-12	10/27/10	8.1	683	5	35	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.31	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/27/10	8.1	698	4	33	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.30	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/25/11	7.4	668	5	31	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.53	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/18/11	7.7	663	4	31	0.03	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.59	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/12	7.1	720	4	32	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.63	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/12	7.1	720	4	32	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.63	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/24/12	7.3	697	3	32	<0.01	<0.0005	0.001	0.028	<0.0008	<0.00003	<0.01	<0.01	<0.002	0.61	<0.0003	<0.002	<0.001	<0.0002	<0.0002	<0.1	0.011
	10/24/12	7.3	697	3	32	<0.01	<0.0005	0.001	0.028	<0.0008	<0.00003	<0.01	<0.01	<0.002	0.60	<0.0003	<0.002	<0.001	<0.0002	<0.0002	<0.1	0.011
MW-13	10/24/97	7.9	441	<1	80	0.15	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
MW-OW	11/14/94	7.3	771	29	29	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.57	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.15
	12/29/94																					
	5/25/95	7.8	721	4	33	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.58	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.08
	12/8/95	7.3	718	4	37	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	0.01	<0.005	<0.005	<0.1	<0.10	0.09
	3/30/96	7.4	732	5	29	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	1.01	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.13
	10/24/97	7.6	691	6	37	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.57	<0.01	0.01	<0.005	<0.005	<0.1	<0.1	0.05
	6/29/98	7.3	714	9	34	<0.05	<0.05	<0.005	0.07J	<0.001	<0.001	<0.01	<0.01	<0.01	1.01	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.12
	11/17/98	7.5	757	119	15	<0.05	<0.05	<0.005J	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.00	<0.01	0.03	<0.005	<0.005	<0.1	<0.1	0.30
	5/4/99	7.7	687	7	34	<0.05	<0.05	<0.005	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.68	<0.01	0.01	<0.005	<0.005	<0.1	<0.1	0.06

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	pH (std units)	SC (umhos/cm)	Chloride (mg/l)	Sulfate (mg/l)	Nitrate + Nitrite (mg/l)	Metals (mg/l)															
							Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-OW (cont.)	12/2/99	7.4	675	4	36	<0.05	<0.05	<0.005	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.73	<0.01	0.01	<0.005	<0.005	<0.1	<0.1	0.03
	8/20/04	7.5	794	10	90	<0.05	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.68
	8/20/04	7.5	802	10	100	<0.05	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.64
	11/10/06	7.7	718	22	27	<0.02	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	0.31	<0.002	0.01	<0.005	<0.0002	<0.01	<0.05	0.36
	6/28/07	7.7	692	10	36	<0.01	<0.01	<0.005	0.07	<0.001	<0.0005	<0.002	<0.005	<0.001	0.41	<0.002	0.01	<0.005	<0.0002	<0.01	<0.05	0.16
	12/18/07	7.5	669	47	2	<0.01	<0.01	<0.005	0.09	<0.001	<0.0005	<0.002	<0.005	<0.001	3.79	<0.002	0.01	<0.005	<0.0002	<0.01	<0.05	3.17
	1/21/09	7.8	678	49	<1	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.87	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.29
	6/1/09	7.6	654	51	<1	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.47	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.48
	6/1/09	7.7	649	51	<1	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.47	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.48
	6/5/09																					
	10/26/09	8.1	683	14	18	<0.05	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.38	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.04
	10/25/10	8.2	646	17	5	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.81	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	0.46
	5/24/11	7.8	739	54	17	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.86	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	1.28
	10/18/11	8.0	676	5	30										1.22							1.03
	5/22/12	7.2	740	12	32										1.62							0.90
	10/24/12	7.4	709	4	32										1.14							1.26
MW-HW	6/10/80	7.6	848	2.5	107	0.25					<0.002	0.007		0.013	0.75	<0.04	0.01		0.006		0.007	0.04
	11/14/94	7.1	815	3	100	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.14	<0.01	<0.1	<0.005	<0.005	<0.1	<0.10	0.04
	5/25/95	7.8	780	8	38	0.12	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.1	<0.005	<0.005	<0.1	<0.10	0.02
	12/8/95	7.2	786	4	75	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.05
	3/30/96	7.4	796	8	29	0.44	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.005	<0.005	<0.1	<0.10	0.04
	10/24/97	7.4	779	4	83	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	6/29/98	7..3	723	7	55	<0.05	<0.05	<0.005	0.06J	<0.001	<0.001	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.05
	11/17/98	7.2	668	4	87	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.52	<0.01	<0.01J	<0.005	<0.005	<0.1	<0.1	0.04
	5/4/99	7.6	755	4	87	0.15	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.25	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.04
	12/2/99	7.2	763	4	105	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.34	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	8/20/04	7.6	705	10	40	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	11/29/05	7.4	676	5	78	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	11/29/05	7.4	700	6	77	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
	11/10/06	7.5	753	9	35	<0.05	<0.01	<0.005	0.06	<0.001	<0.0005	<0.002	<0.005	0.001	0.28	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	0.03
	6/28/07	7.7	756	10	36	0.17	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	0.010	<0.0002	<0.01	<0.05	<0.01
	12/18/07	7.4	756	9	36	0.01	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	0.02
	1/21/09	7.5	837	8	34	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	6/1/09	7.5	773	10	37	0.17	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	10/26/09	8.0	795	8	36	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.10
	5/24/11	7.7	749	9	28	0.13	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	0.03
	10/18/11	7.8	754	7	30	0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	0.02
	5/23/12	7.3	800	8	31	0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	0.04
	10/23/12	7.3	782	6	35	<0.01	<0.0005	<0.001	0.068	<0.0008	<0.00003	<0.01	<0.01	<0.002	<0.02	<0.0003	<0.002	<0.001	<0.0002	<0.0002	<0.1	0.013
Richards	6/28/07	7.9	645	5	47	<0.01	<0.01	<0.005	0.07	<0.001	<0.0005	<0.002	<0.005	<0.001	0.14	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																								
		Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene
MW-1	8/10/93			<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1			<1				<1	<1	<1	<1	
	12/8/95	<25	<25	<5	<5	<5	<5	<5	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5
	3/30/96	43J	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	11/21/03	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/10/06	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/28/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/22/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-2	8/10/93			<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1			<1				<1	<1	<1	<1	
	6/28/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.49J
MW-4	8/10/93			<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1			<1				<1	<1	<1	<1	
	11/21/03	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.59J	<1	<1	<1	2.0
MW-5	11/21/03	29	<20	22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8/19/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/30/05	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.19J	<1	<1	<1	<1
	11/9/06	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.22J	<1	<1	<1	<1
	6/27/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/19/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/3/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-6	6/27/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-6M	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-7	12/8/95	<25	<25	<5	<5	<5	<5	<5	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5
	3/30/96	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	1.3
MW-7R	6/28/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-8	11/21/03	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-9	12/8/95	<25	<25	<5	<5	<5	<5	<5	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5
	3/30/96	73	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	2.1
MW-9R	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	0.28J	<1	<1	<1	1.1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.34J	<1	<1	<1	0.32J
	6/2/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.8
	10/27/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.8
	10/26/10	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.8
	5/23/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.54J	<1	<1	<1	18
	5/23/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.52J	<1	<1	<1	18
	10/18/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.40J	<1	<1	<1	15
	5/23/12	<20	<20	<1	<1	<1	<1	<1	0.59J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.44J	<1	<1	11
	10/24/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.7
MW-10	11/14/94	<50	<20	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<2	1.9	0.32J	<1	<1	22

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		VOCs (ug/l)																								
Well	Date	Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene
MW-10	12/29/94			<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5
(cont.)	5/25/95	34J	<20	2.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.7	<1	<1	<1	<1	<1	<2	2.5	0.32J	<1	<1	45
	12/8/95	<50	<20	0.35J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	0.27J	<1	<1	<1	4.0
	3/30/96	43J	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	1.3
MW-10R	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	0.35J	<1	<1	<1	<1
	6/29/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	11/17/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	5/4/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	12/3/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/22/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/2/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-11	10/26/10	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/24/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/17/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/17/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<20	<20	<1	<1	<1	<1	<1	0.26J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/23/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-11M	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.3	0.36J	<1	<1	0.41J
MW-12	10/27/10	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.57J
	10/27/10	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.62J
	5/25/11	<20	<20	<1	<1	<1	<1	<1	0.14J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.80J
	10/18/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<20	<20	<1	<1	<1	<1	<1	0.17J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/24/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/24/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-13	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
MW-OW	11/14/94	<50	<20	0.82J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<2	1.1	<1	<1	<1	37
	12/29/94			<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	0.73
	5/25/95	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	1.2
	12/8/95	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	3/30/96	69	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	3.3
	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	3.0
	6/29/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	8.6
	11/17/98	<50	<20	2.4	<1	<1	<1	<1	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	3.8	0.38J	<1	<1	148
	5/4/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	1.6

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																								
		Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene
MW-OW (cont.)	12/2/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	2.1
	8/20/04	<20	<20	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.92J	0.25J	<1	<1	78
	8/20/04	<20	<20	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.89J	0.24J	<1	<1	77
	11/10/06	<20	<20	0.38J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.18J	<1	<1	<1	27
	6/28/07	<20	<20	0.14J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9.0
	12/18/07	<20	<20	1.9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	62
	1/21/09	<20	<20	1.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	33
	6/1/09	<20	<20	0.61J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	18
	6/1/09	<20	<20	0.67J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	18
	6/5/09			1.2	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	46
	10/26/09	<20	<20	0.89J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	22
	10/25/10	<20	<20	0.74J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	20
	5/24/11	<20	<20	1.2	0.45J	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.20J	<1	<1	<1	<1	<1	<1	<1	<1	0.17J	<1	30
	10/18/11	<20	<20	<1	<1	<1	<1	<1	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.7
	5/22/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	8.9
	10/24/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.8
MW-HW	6/10/80																									
	11/14/94	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	5/25/95	29J	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	12/8/95	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	3/30/96	71	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	6/29/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	11/17/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	5/4/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	12/2/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/29/05	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/29/05	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/10/06	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/28/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/18/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/21/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/1/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/26/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/24/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/18/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/23/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Richards	6/28/07			<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		VOCs (ug/l)																								
Well	Date	trans-1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-1	8/10/93	<1		<1	<1	<1		<1			<1	<1		<1	<1	1.2	<1J	<1	<1	<1	<1	<1	<1			<1
	12/8/95	<5	<5	<5	<5	<5	<25		<25	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/21/03	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.29J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/10/06	<1	<1	<1	<1	<1	<10	<1	<20	<10	<1	<1	<1	<1	<1	0.29J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/22/09	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-2	8/10/93	<1		<1	<1	<1		<1			<1	<1		<1	<1.0	<1	<1	<1	<1	<1	<1	<1	<1			<1
	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	0.55J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-4	8/10/93	<1		<1	<1	<1		<1			<1	<1		<1	<1.0J	<1	<1	<1	<1	<1	<1	<1	<1			<1
	11/21/03	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.66J	<1	<1	<1	0.26J	<1	<1	<1	<1	<1	<1	
MW-5	11/21/03	<1	<1	<1	<1	0.96J	<20	<1	<20	<20	<1	0.90J	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	1.5	0.75J	
	8/19/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	7.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/30/05	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.22J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/9/06	<1	<1	<1	<1	<1	<10	<1	<20	<10	<1	<1	<1	<1	<1	0.16J	<1	<1	<1	<1	<1	<1	<1	0.13J	<1	0.13J
	6/27/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	0.40J	<1	<1	<1	<1	<1	<1	<1	0.29J	<1	0.29J
	12/19/07	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.20J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/3/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-6	6/27/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	0.21J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-6M	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-7	12/8/95	<5	<5	<5	<5	<5	<25		<25	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.21J	0.27J	<1	<1	<1	<1	<1	<1	<1	0.16J	<1	
MW-7R	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-8	11/21/03	<1	<1	<1	<1	<1	<20	<1	<20	<20	0.22J	<1	<1	<1	<1	0.61J	<1	<1	<1	<1	<1	<1	<1	0.27J	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.30J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-9	12/8/95	<5	<5	<5	<5	<5	<25		<25	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
MW-9R	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.67J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.53J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/2/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	1.2	<1	<1	<1	0.42J	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.76J	<1	<1	<1	0.22J	<1	<1	<1	<1	<1	<1	<1
	10/26/10	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.33J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	1.1	<1	<1	<1	0.43J	<1	<1	<1	<1	<1	<1	<1
	5/23/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	1.2	<1	<1	<1	0.43J	<1	<1	<1	<1	<1	<1	<1
	10/18/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.84J	<1	<1	<1	0.45J	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.63J	<1	<1	<1	0.46J	<1	<1	<1	<1	<1	<1	<1
	10/24/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.42J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-10	11/14/94	<1	0.51J	<1	<1	<1	<20	<1	<20	<20	1.5	<1	<1	<1	<1	0.57J	<1	<1	0.15J	<1	<1	<1	<1	<1	<1	

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																								
		trans-1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-10	12/29/94	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
(cont.)	5/25/95	<1	0.43J	<1	<1	<1	<20	<1	<20	<20	1.1	<1	<1	<1	<1	<1	<1	<1	0.27J	<1	<1	<1	1.5	<1	<1	
	12/8/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.10J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
MW-10R	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	6/29/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/17/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	5/4/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/3/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.92J	<1	<1	<1	<1	<1	<1	<1	0.22J	<1	0.22J
	1/22/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/2/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.19J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.20J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-11	10/26/10	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/24/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/17/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/17/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-11M	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	0.29J	<1	<1	<1	0.99J	<1	<1	<1	0.23J	<1	<1	<1	<1	<1	<1	<1
MW-12	10/27/10	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/10	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/25/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/18/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/24/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/24/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-13	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
MW-OW	11/14/94	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	0.18J	<1	<1	<1	1.4	<1	<1	
	12/29/94	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
	5/25/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/8/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.11J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	6/29/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/17/98	0.21J	0.45J	<1	<1	<1	<20	<1	<20	<20	0.38J	<1	<1	<1	<1	<1	<1	<1	1.1	<1	<1	<1	4.6	<1	<1	
	5/4/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																									
		trans-1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-OW (cont.)	12/2/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	0.20J	0.26J	<1	<1	3.0	<20	<1	<20	<20	0.22J	2.0	<1	<1	<1	0.84J	<1	<1	0.41J	<1	<1	<1	2.6	0.65J	<1	0.65J
	8/20/04	0.17J	0.25J	<1	<1	3.0	<20	<1	<20	<20	0.21J	2.1	<1	<1	<1	0.84J	<1	<1	0.43J	<1	<1	<1	2.6	0.64J	<1	0.64J
	11/10/06	<1	<1	<1	<1	0.20J	<10	<1	<20	<10	<1	0.13J	<1	<1	<1	<1	<1	<1	0.22J	<1	<1	<1	0.75J	<1	<1	<1
	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.24J	<1	<1	<1
	12/18/07	0.29J	0.18J	<1	<1	3.3	<20	<1	<20	<20	<1	4.4	<1	<1	<1	<1	<1	<1	0.67J	<1	<1	<1	1.7	0.64J	<1	0.64J
	1/21/09	<1	<1	<1	<1	3.9	<20	<1	<20	<20	<1	2.6	<1	<1	<1	<1	<1	<1	0.26J	<1	<1	<1	0.73J	0.61J	<1	0.61J
	6/1/09	<1	<1	<1	<1	0.39J	<20	<1	<20	<20	<1	0.61J	<1	<1	<1	<1	<1	<1	0.16J	<1	<1	<1	0.48J	<1	<1	<1
	6/1/09	<1	<1	<1	<1	0.30J	<20	<1	<20	<20	<1	0.55J	<1	<1	<1	<1	<1	<1	0.16J	<1	<1	<1	0.46J	<1	<1	<1
	6/5/09	<1	<1	<1	<1	2.3			<20		<1	1.7	<1	<1	<1	<1	<1	<1	0.19J	<1	<1		0.71J	0.40J	<1	0.40J
	10/26/09	<1	<1	<1	<1	5.4	<20	<1	<20	<20	<1	2.1	<1	<1	<1	<1	<1	<1	0.24J	<1	<1	<1	0.59J	0.61J	<1	0.61J
	10/25/10	<1	<1	<1	<1	1.6	<20	<1	<20	<20	<1	1.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.57J	0.41J	<1	0.41J
	5/24/11	<1	<1	<1	<1	1.6	<20	<1	17J	<20	<1	1.9	<1	<1	<1	<1	<1	<1	0.23J	<1	<1	<1	0.76J	0.42J	<1	0.42J
	10/18/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	0.40J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/22/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.22J	<1	<1	<1
	10/24/12	<1	<1	<1	<1	0.28J	<20	<1	<20	<20	<1	0.54J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-HW	6/10/80																										
	11/14/94	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	5/25/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.17J	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/8/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.14J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	6/29/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/17/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	5/4/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/2/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/29/05	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/29/05	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/10/06	<1	<1	<1	<1	<1	<10	<1	<20	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/18/07	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/21/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/1/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/26/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/24/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/18/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Richards	6/28/07	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Figure E-1: pH

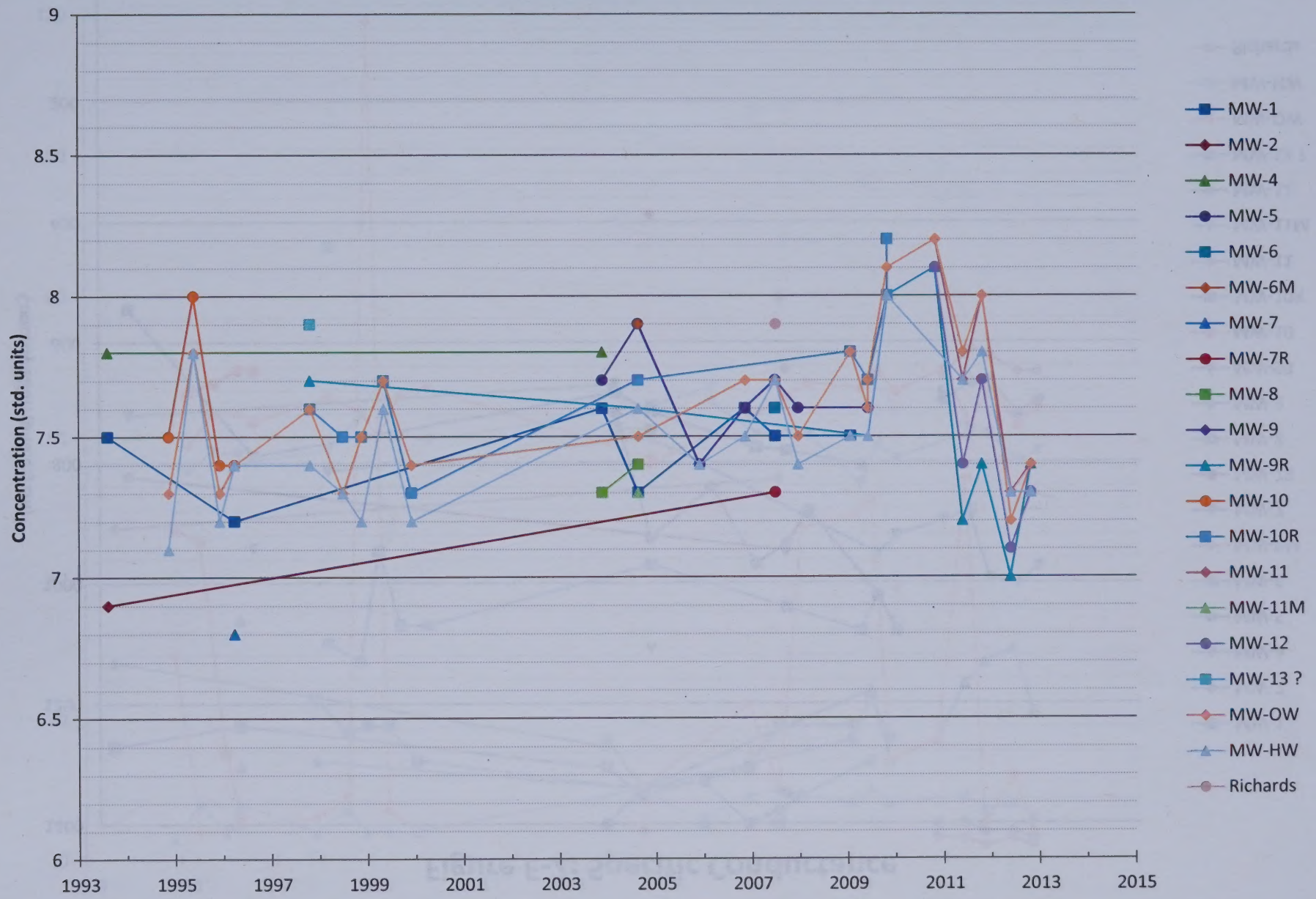

Concentration (std. units)
9
8.5
8
7.5
7
6.5
6
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
MW-1
MW-2
MW-4
MW-5
MW-6
MW-6M
MW-7
MW-7R
MW-8
MW-9
MW-9R
MW-10
MW-10R
MW-11
MW-11M
MW-12
MW-13 ?
MW-OW
MW-HW
Richards

Figure E-2: Specific Conductance

Figure E-3: Chloride

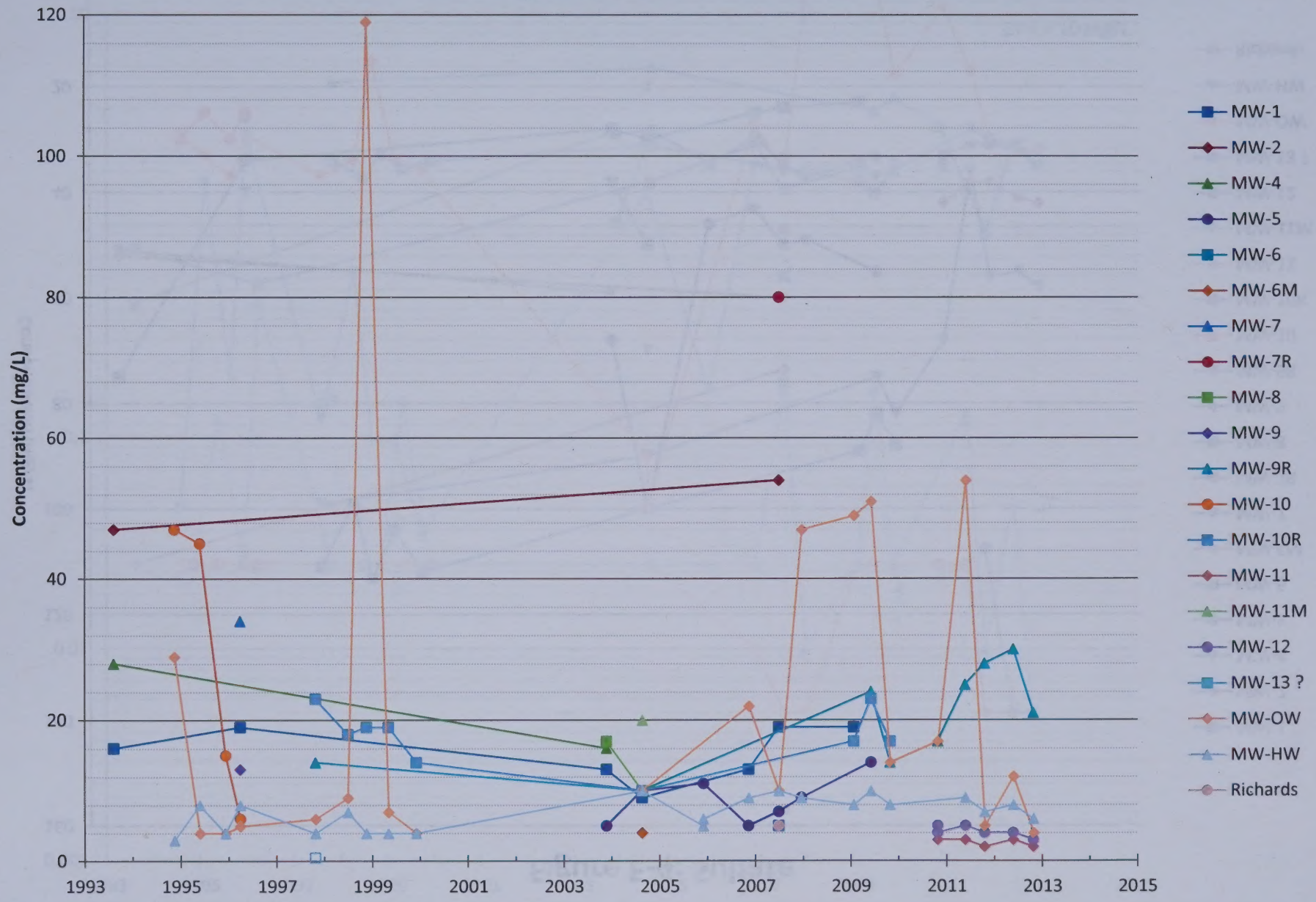


Figure E-4: Sulfate

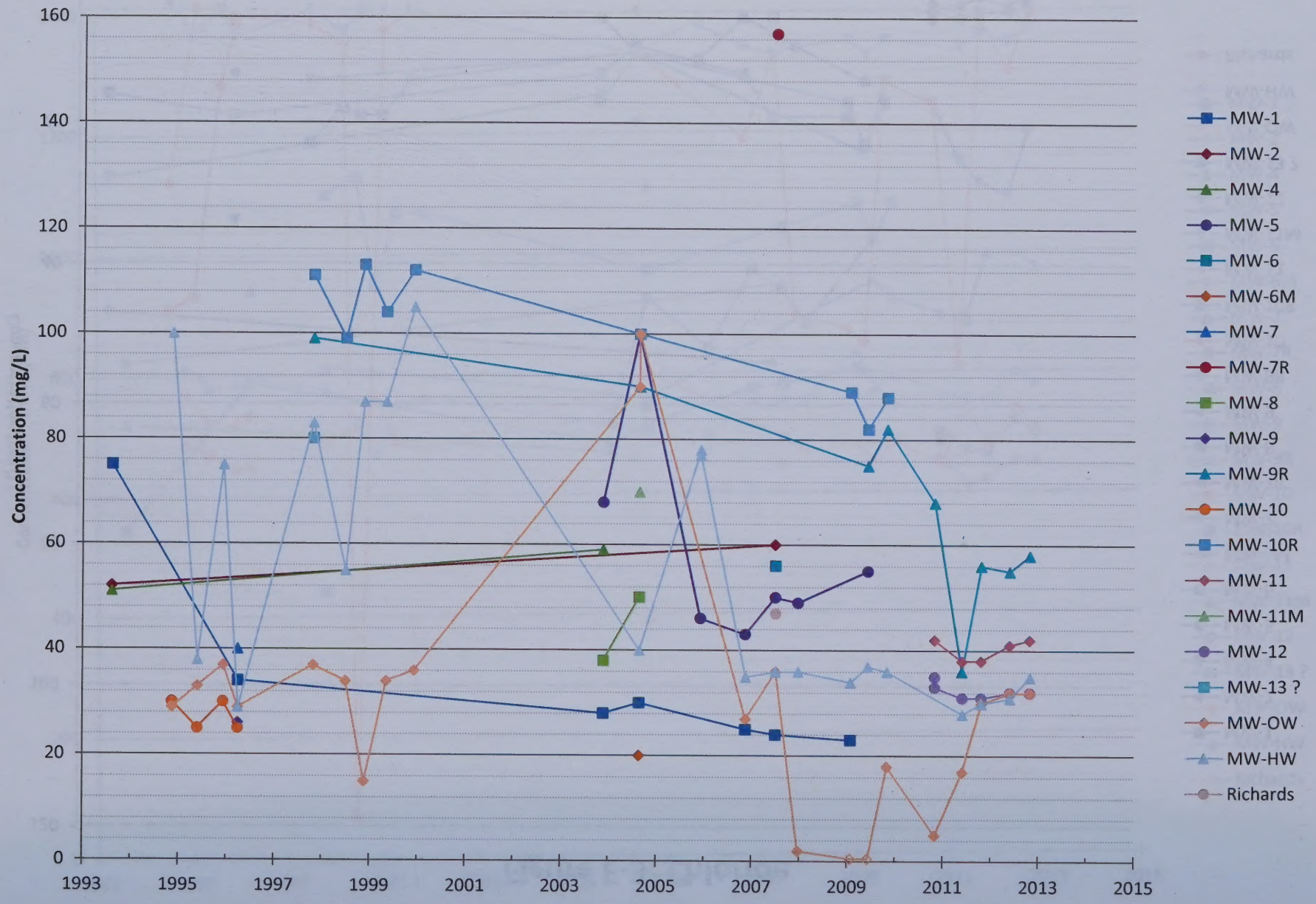


Figure E-5: Nitrate + Nitrite

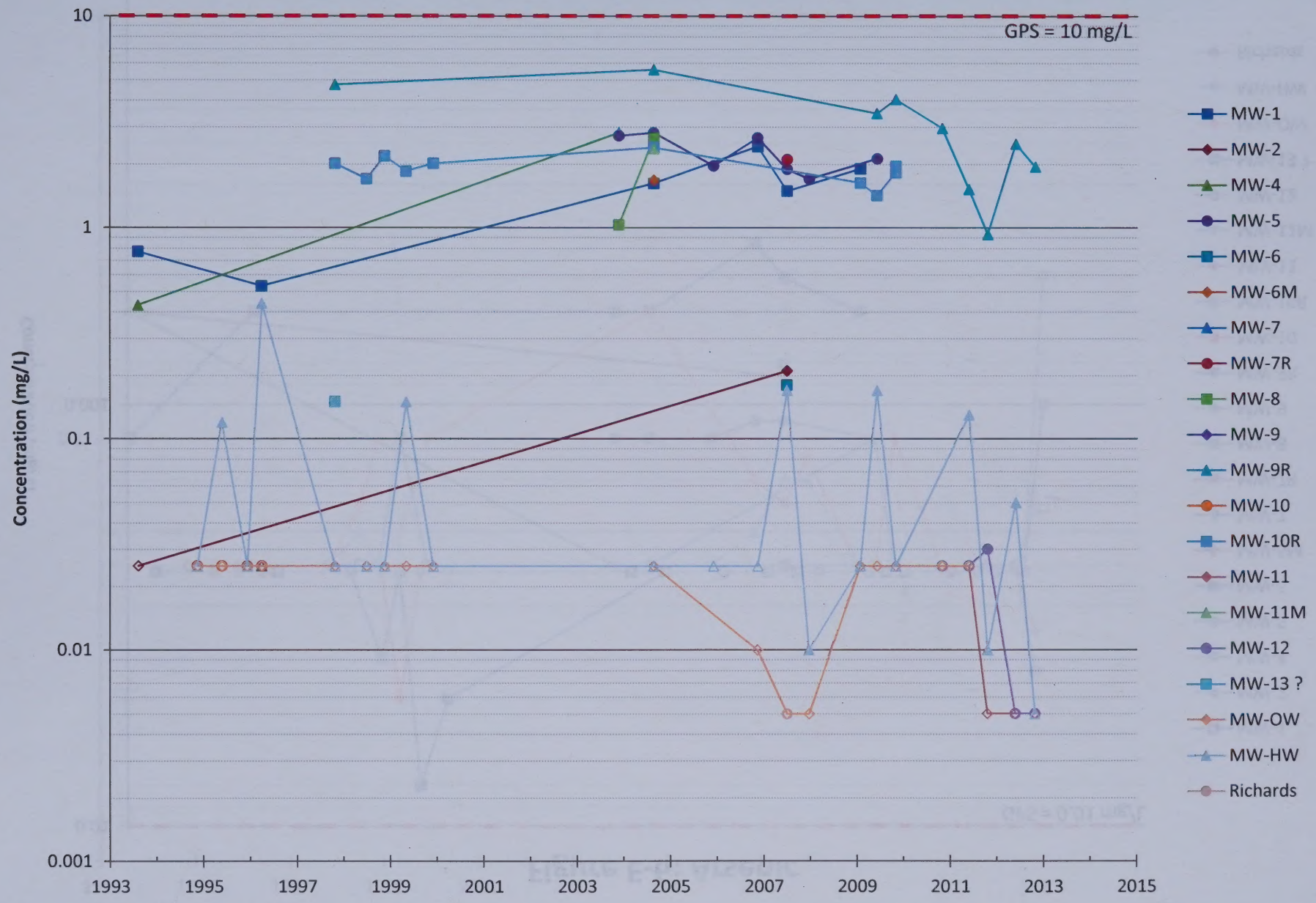


Figure E-6: Arsenic

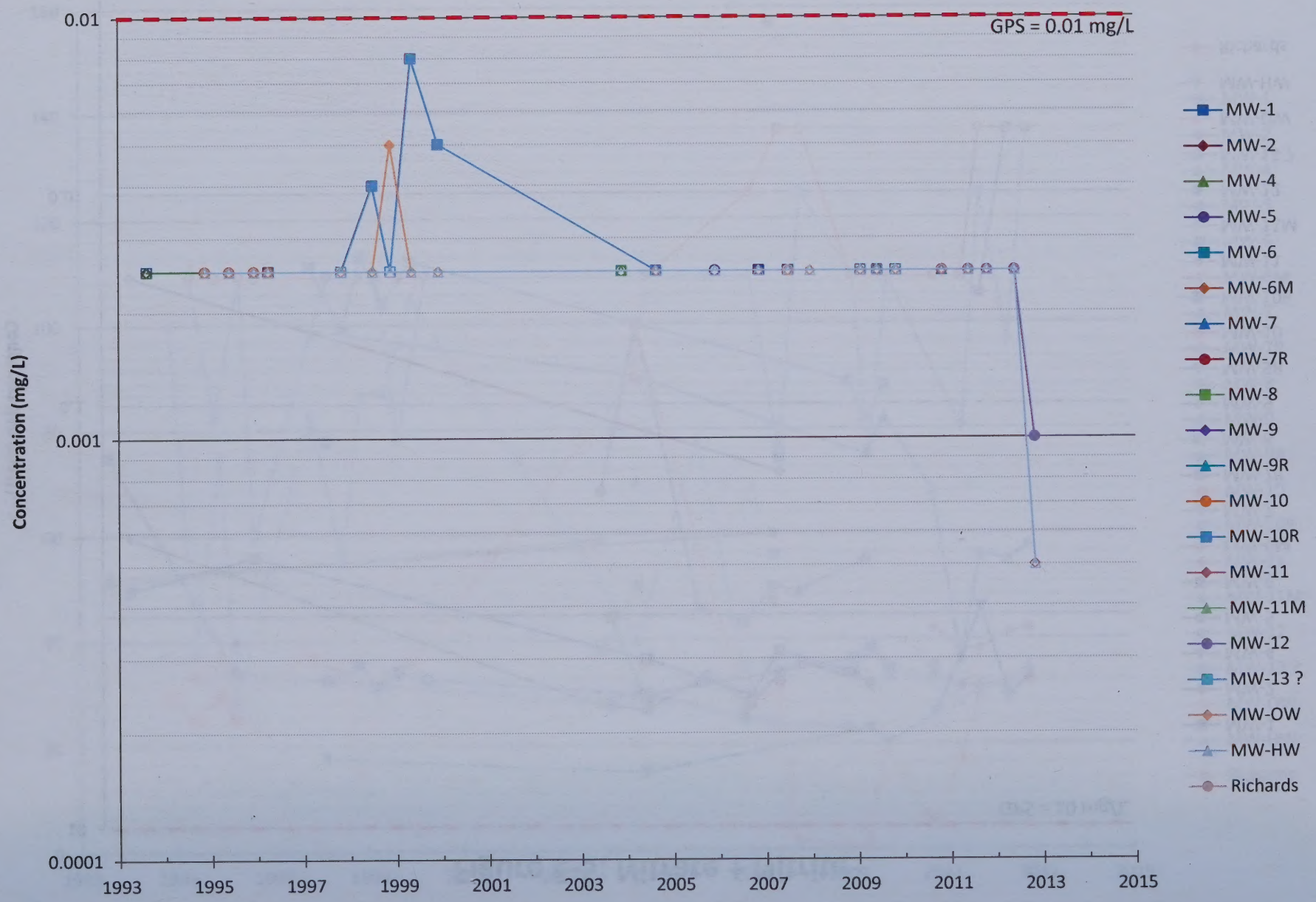


Figure E-7: Barium

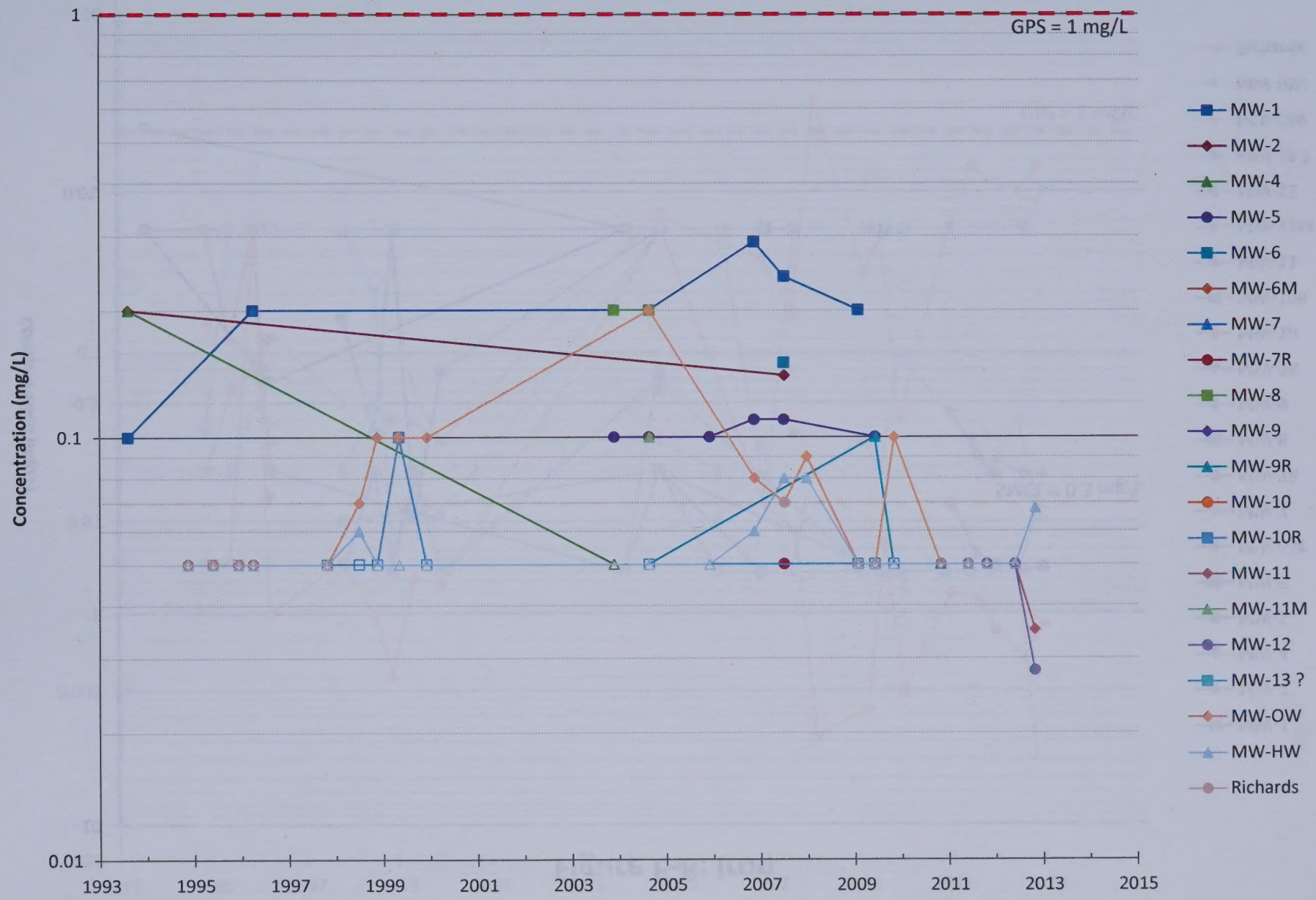


Figure E-8: Iron

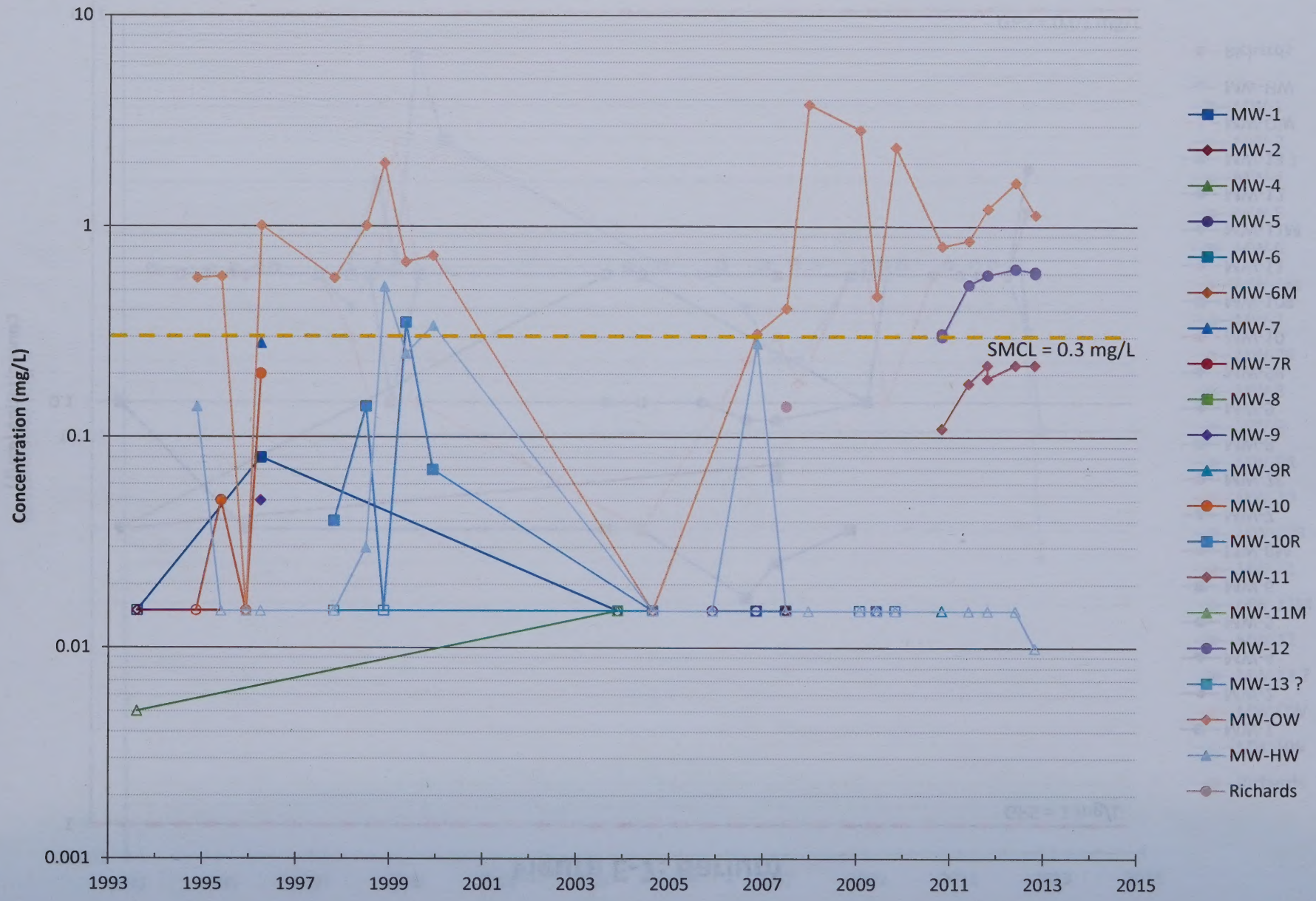


Figure E-9: Zinc

Figure E-10: cis-1,2-Dichloroethene

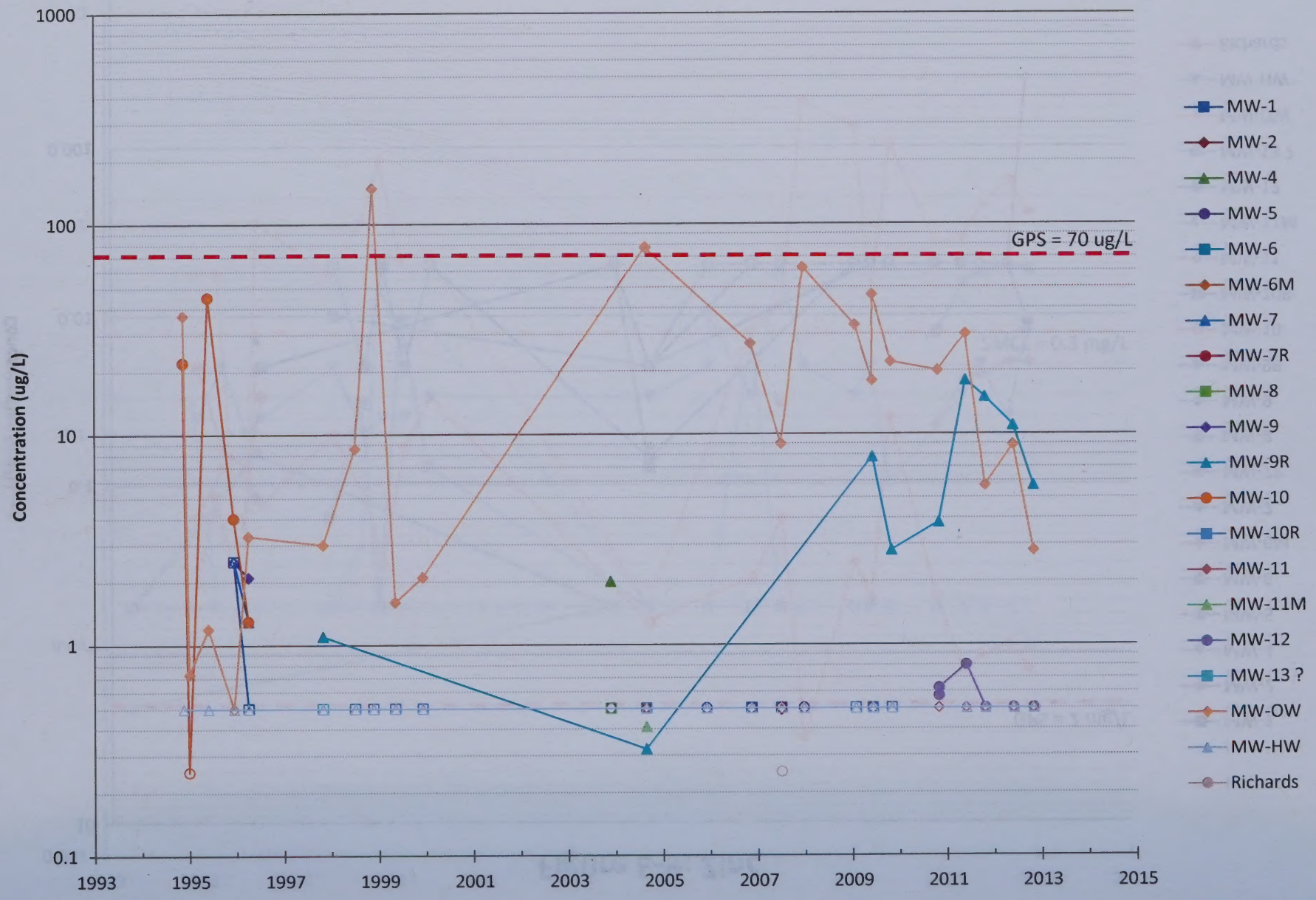
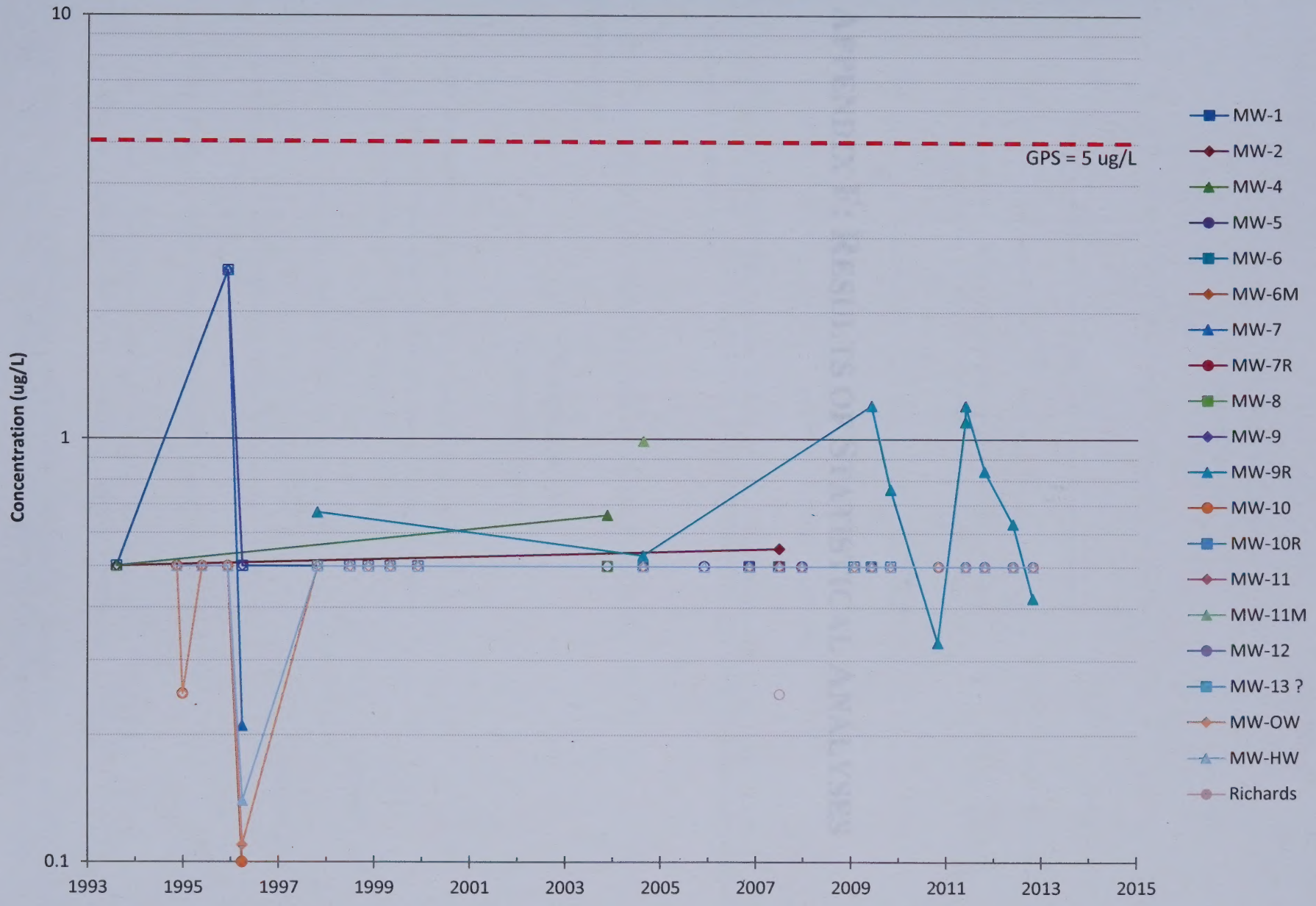


Figure E-12: Styrene

Figure E-11: Ethylbenzene

Figure E-13: Tetrachloroethene

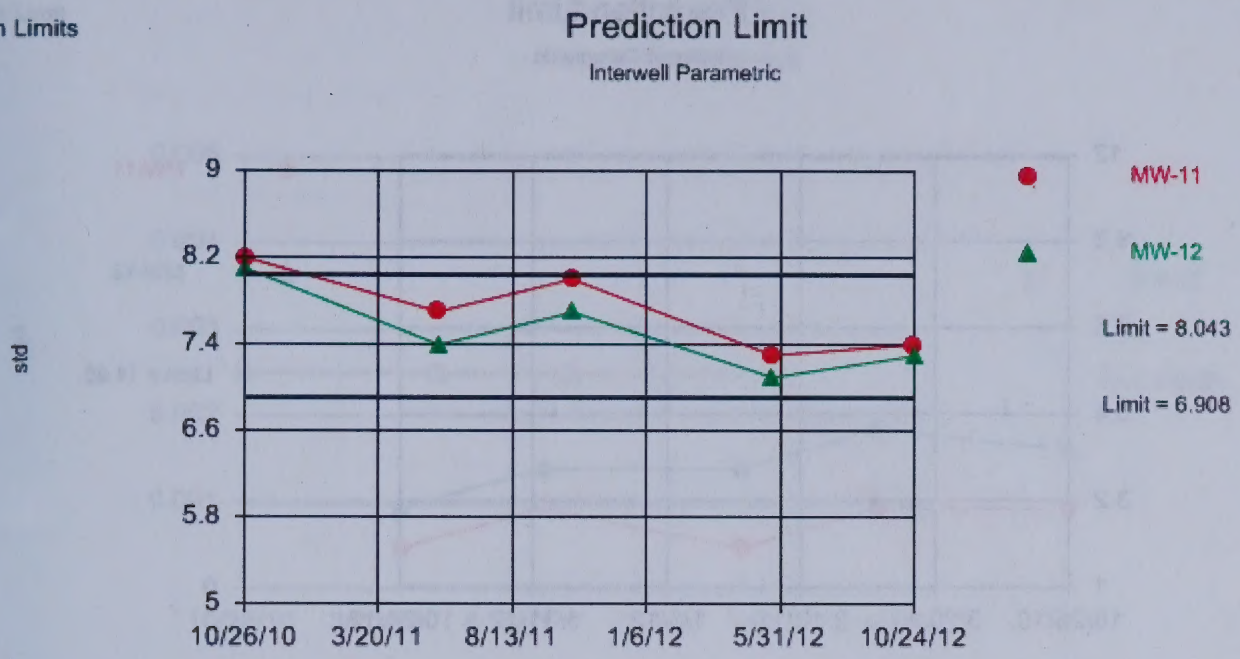


APPENDIX F: RESULTS OF STATISTICAL ANALYSES

Figure F-1: Prediction Limit Analysis for pH

v.9.0.34 For regulatory purposes only. EPA

Within Limits

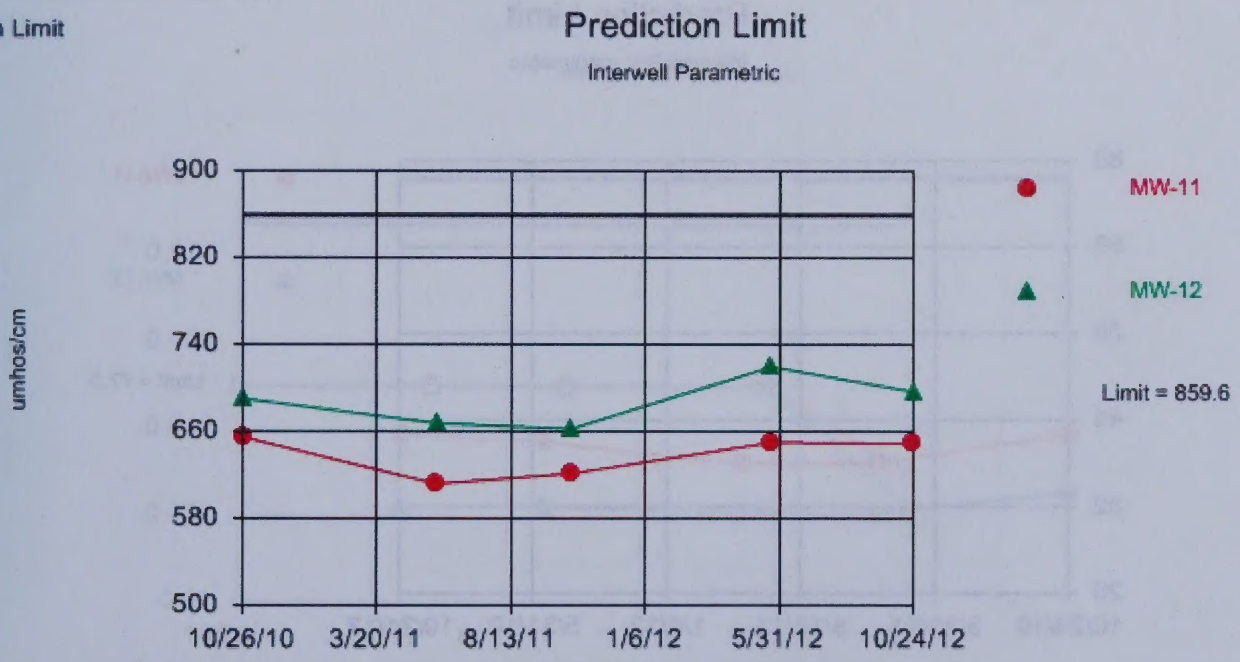


Background Data Summary: Mean=7.475, Std. Dev.=0.2299, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.968, critical = 0.878. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Figure F-2: Prediction Limit Analysis for Conductivity

v.9.0.34 For regulatory purposes only. EPA

Within Limit

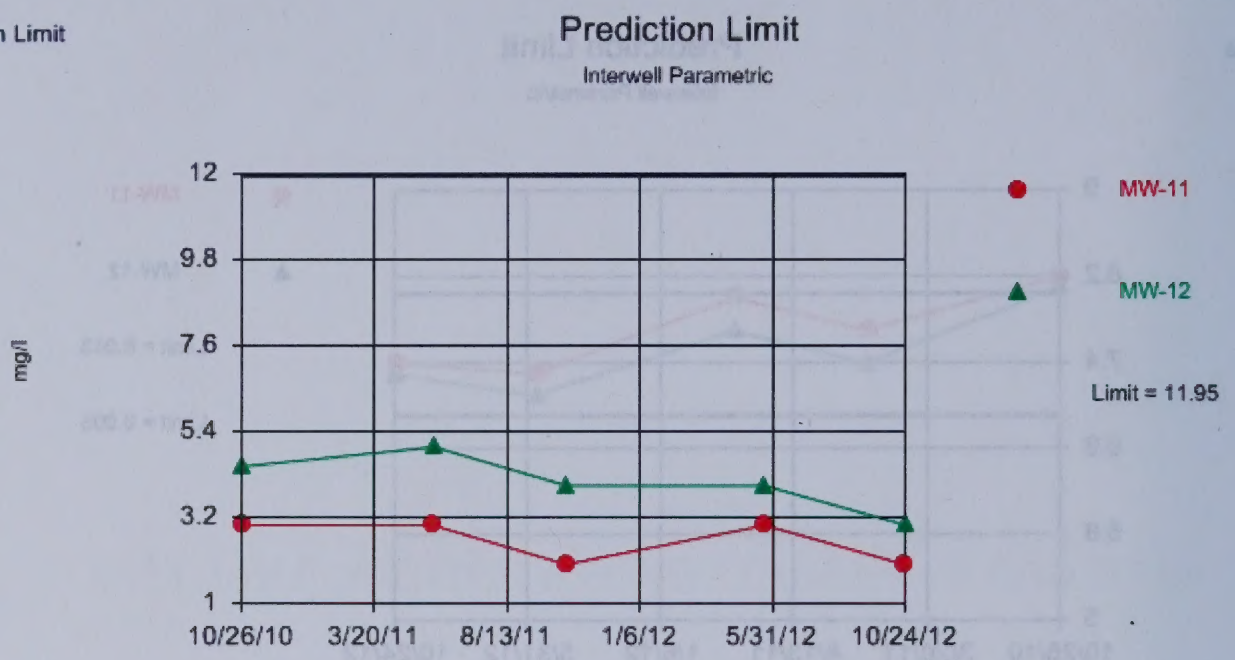


Background Data Summary: Mean=766.4, Std. Dev.=43.82, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9644, critical = 0.878. Report alpha = 0.05. Individual comparison alpha = 0.025. Most recent point for each compliance well compared to limit.

Figure F-3: Prediction Limit Analysis for Chloride

v.9.0.34 For regulatory purposes only. EPA

Within Limit

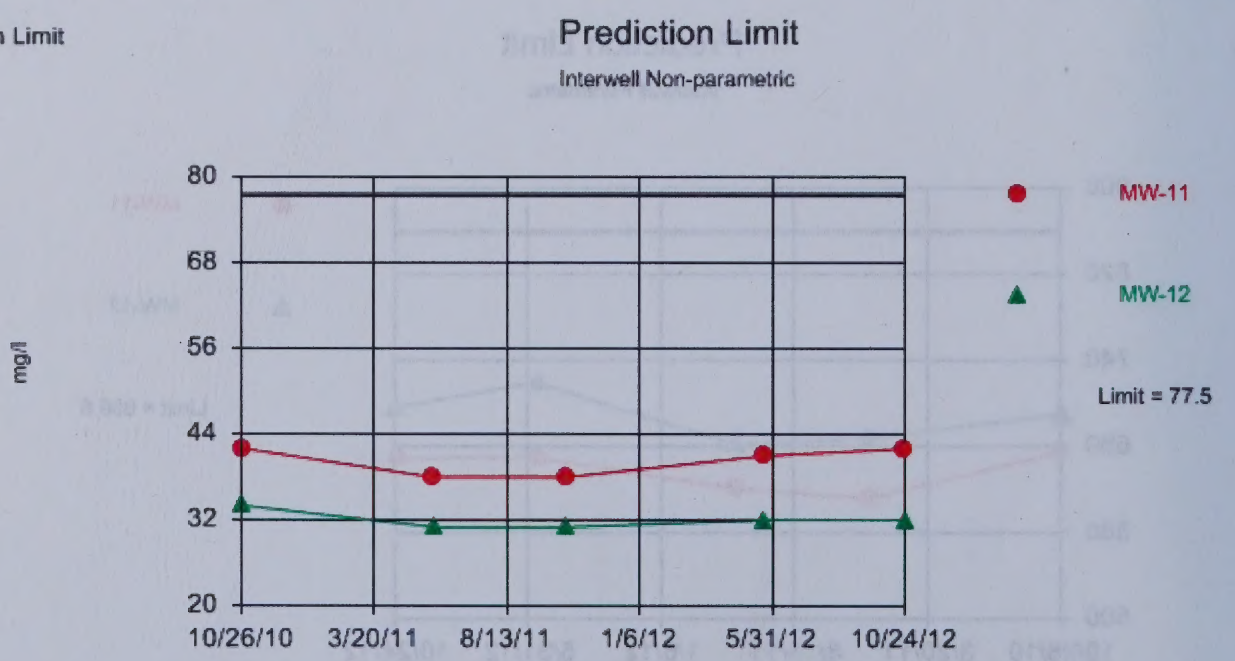


Background Data Summary: Mean=6.727, Std. Dev.=2.458, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9051, critical = 0.878. Report alpha = 0.05. Individual comparison alpha = 0.025. Most recent point for each compliance well compared to limit.

Figure F-4: Prediction Limit Analysis for Sulfate

v.9.0.34 For regulatory purposes only. EPA

Within Limit



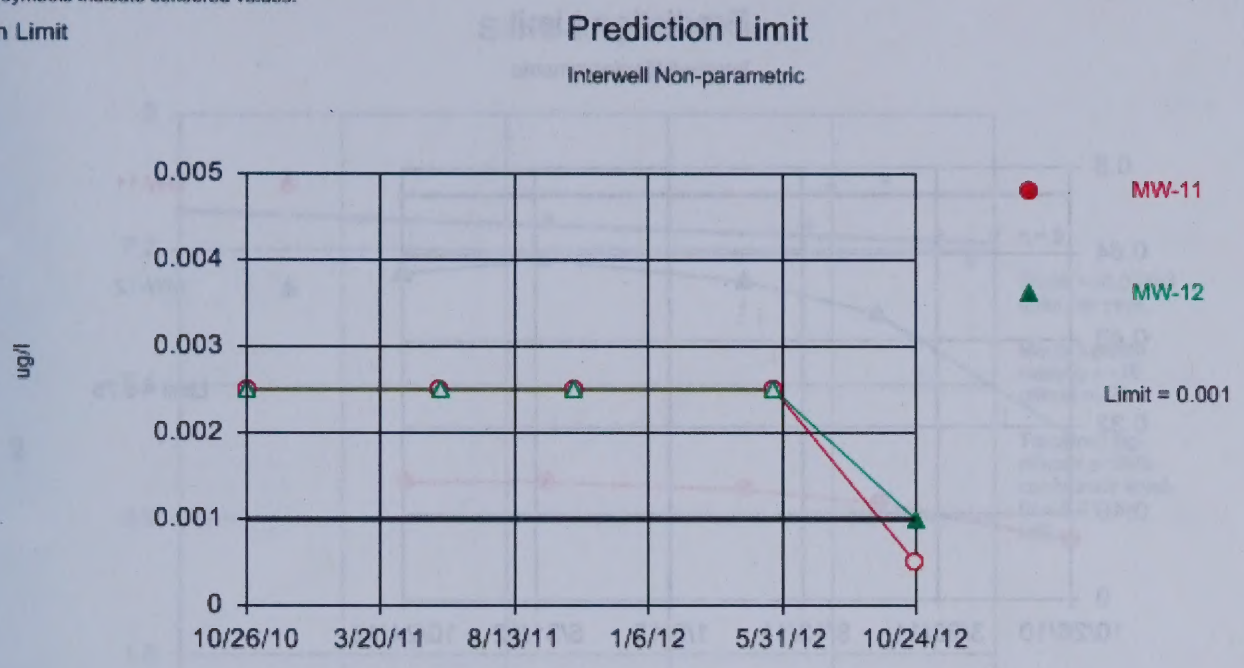
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 12 background values Report alpha = 0.1429. Individual comparison alpha = 0.07418. Most recent point for each compliance well compared to limit.

Figure F-5: Prediction Limit Analysis for Arsenic

v.9.0.34 For regulatory purposes only. EPA

Hollow symbols indicate censored values.

Within Limit



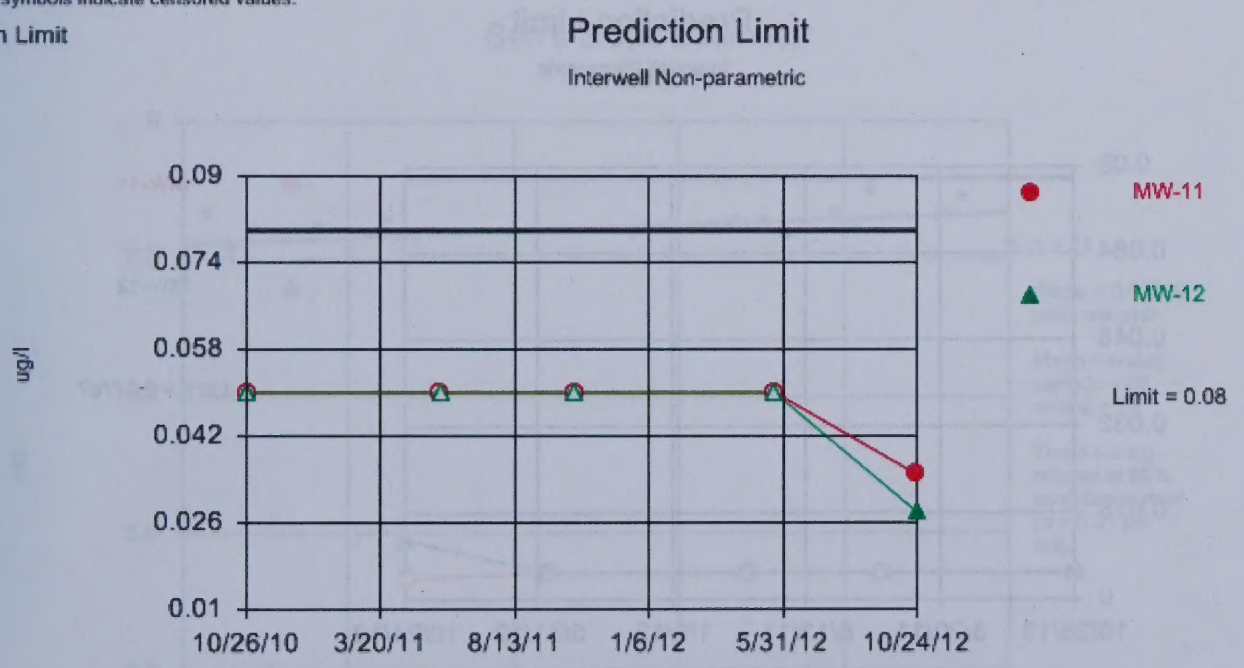
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values were censored; limit is most recent reporting limit Report alpha = 0.08696. Individual comparison alpha = 0.04447. Most recent point for each compliance well compared to limit.

Figure F-6: Prediction Limit Analysis for Barium

v.9.0.34 For regulatory purposes only. EPA

Hollow symbols indicate censored values.

Within Limit

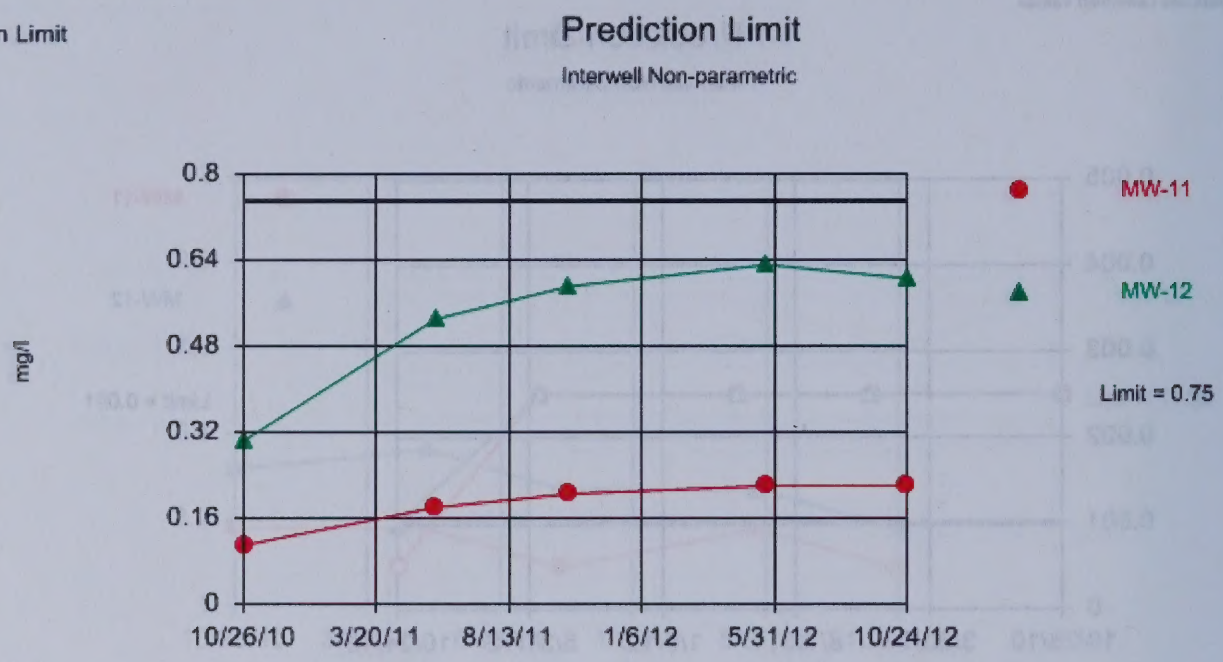


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 21 background values. 76.19% NDs Report alpha = 0.08696. Individual comparison alpha = 0.04447. Most recent point for each compliance well compared to limit.

Figure F-7: Prediction Limit Analysis for Iron

v.9.0.34 For regulatory purposes only. EPA

Within Limit



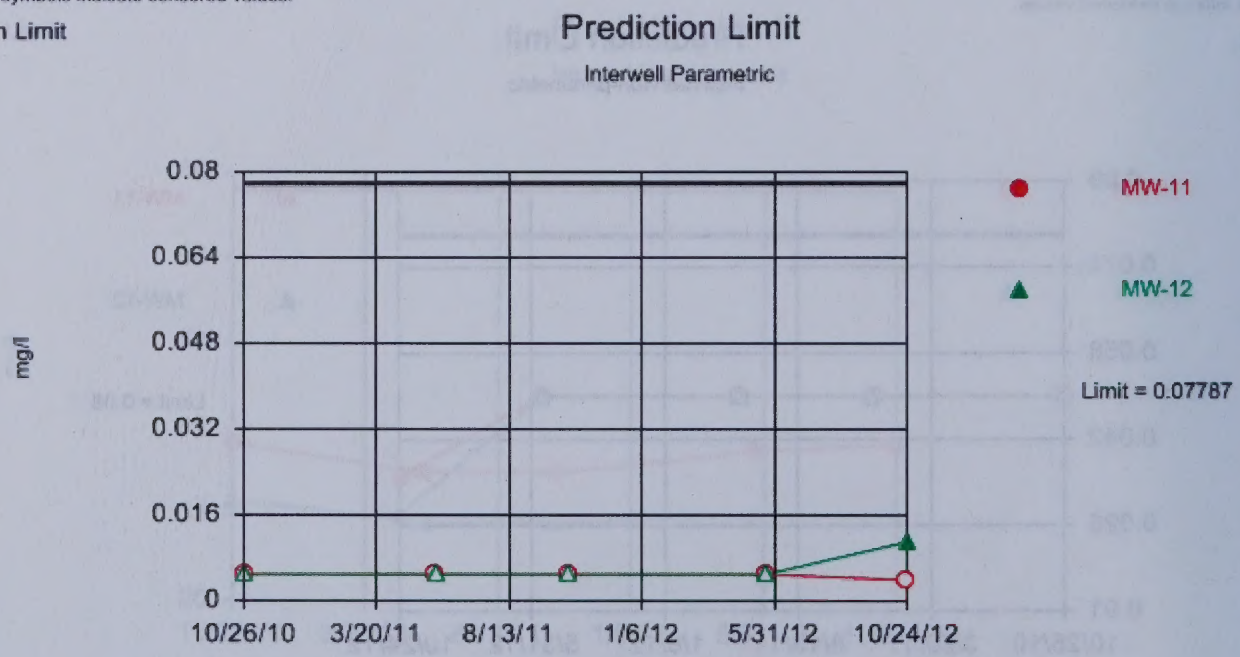
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 22 background values. 68.18% NDs Report alpha = 0.08333. Individual comparison alpha = 0.04257. Most recent point for each compliance well compared to limit.

Figure F-8: Prediction Limit Analysis for Zinc

v.9.0.34 For regulatory purposes only. EPA

Hollow symbols indicate censored values.

Within Limit



Background Data Summary (based on square root transformation): Mean=0.1743, Std. Dev.=0.04928, n=22, 4.545% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.927, critical = 0.878. Report alpha = 0.05. Individual comparison alpha = 0.025. Most recent point for each compliance well compared to limit.

Figure F-9: Trend Analysis for pH in MW-9R

v.9.0.34 For regulatory purposes only. EPA

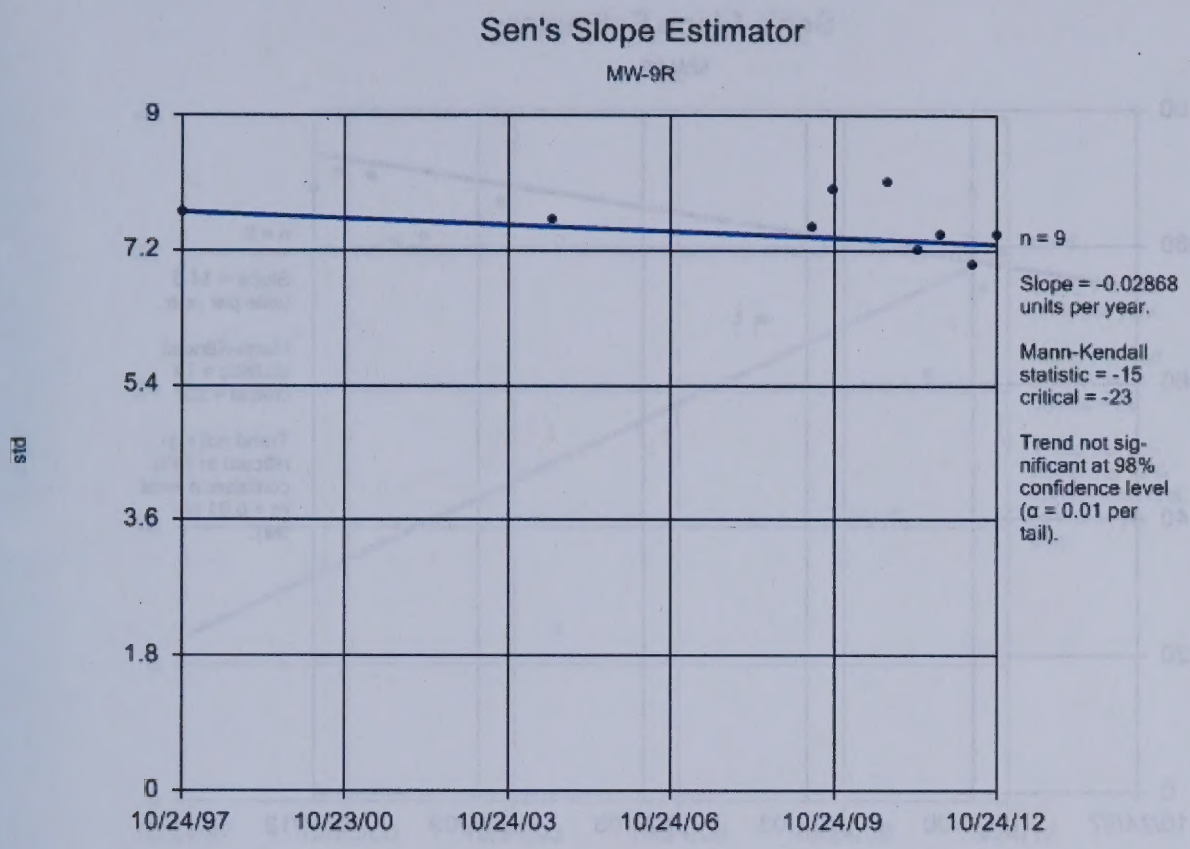


Figure F-10: Trend Analysis for pH in MW-OW

v.9.0.34 For regulatory purposes only. EPA

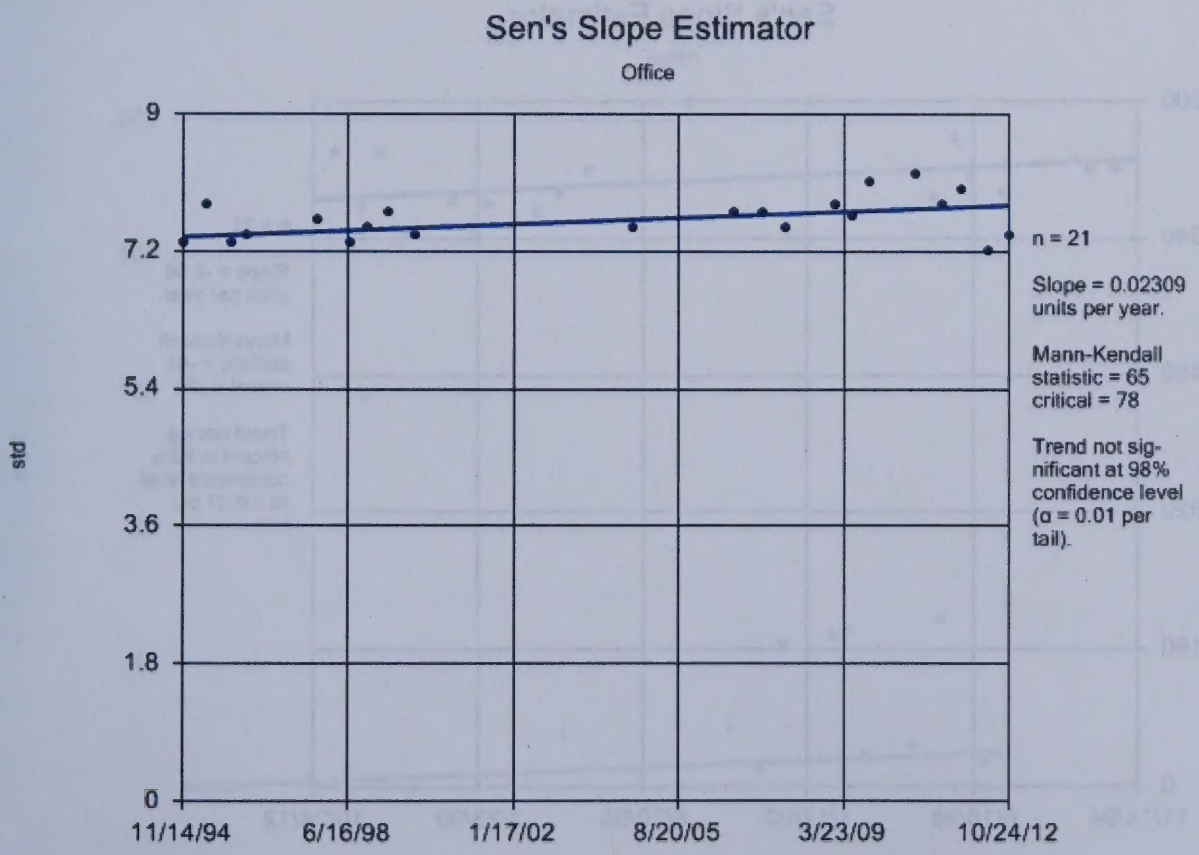


Figure F-11: Trend Analysis for Specific Conductance in MW-9R

v.9.0.34 For regulatory purposes only. EPA

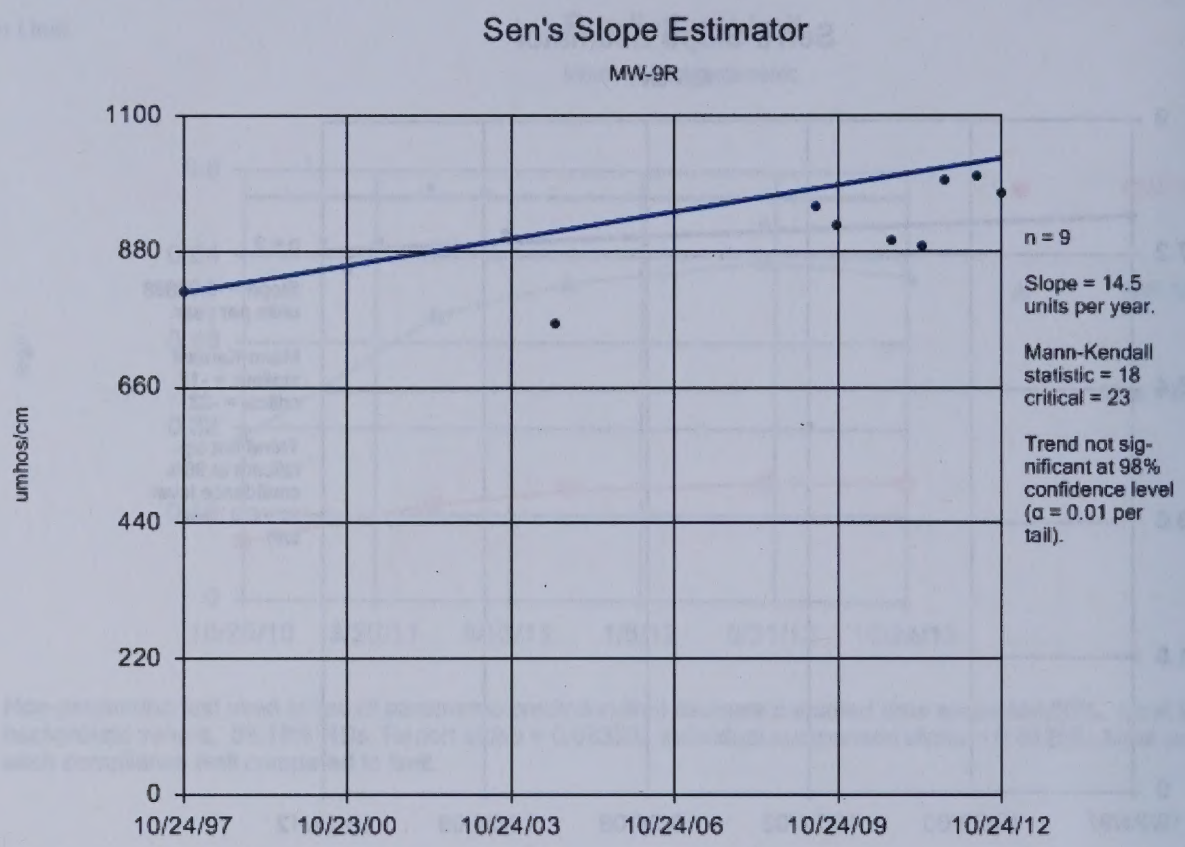


Figure F-12: Trend Analysis for Specific Conductance in MW-OW

v.9.0.34 For regulatory purposes only. EPA

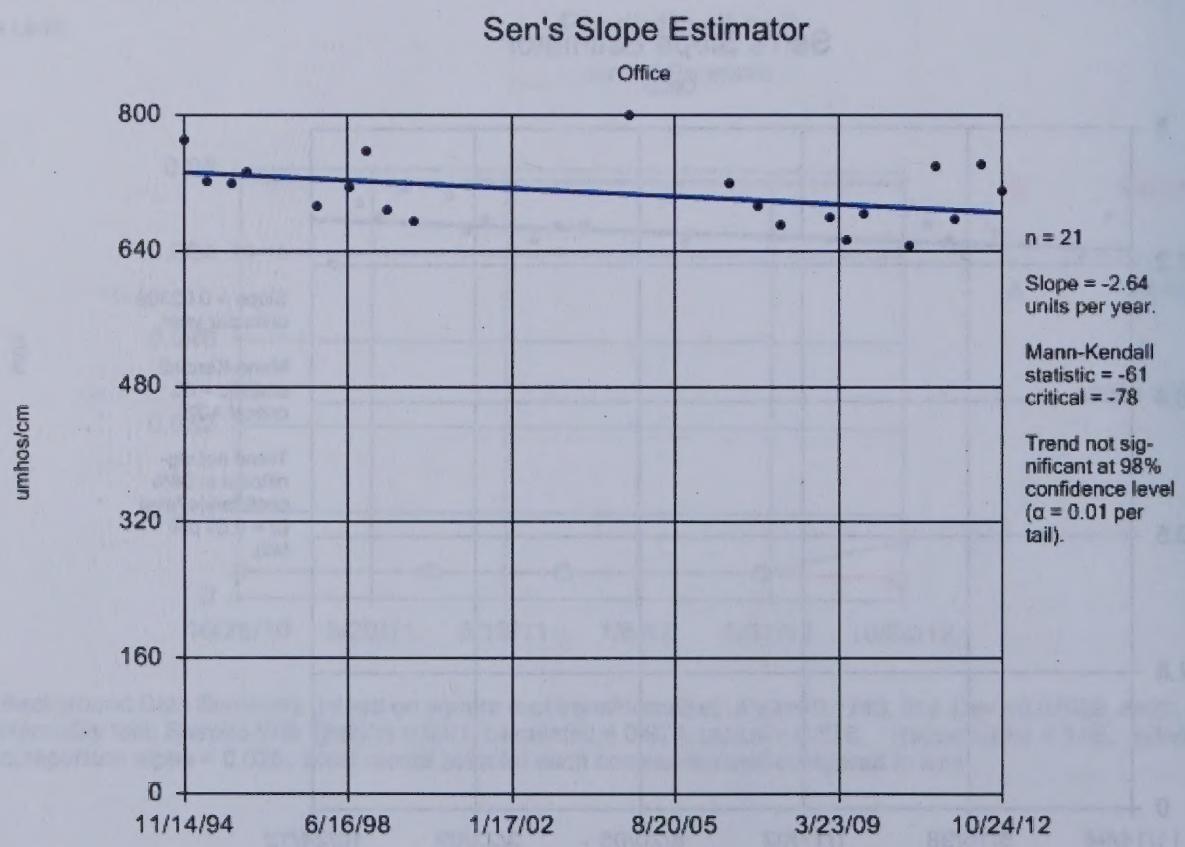


Figure F-13: Trend Analysis for Chloride in MW-9R

v.9.0.34 For regulatory purposes only. EPA

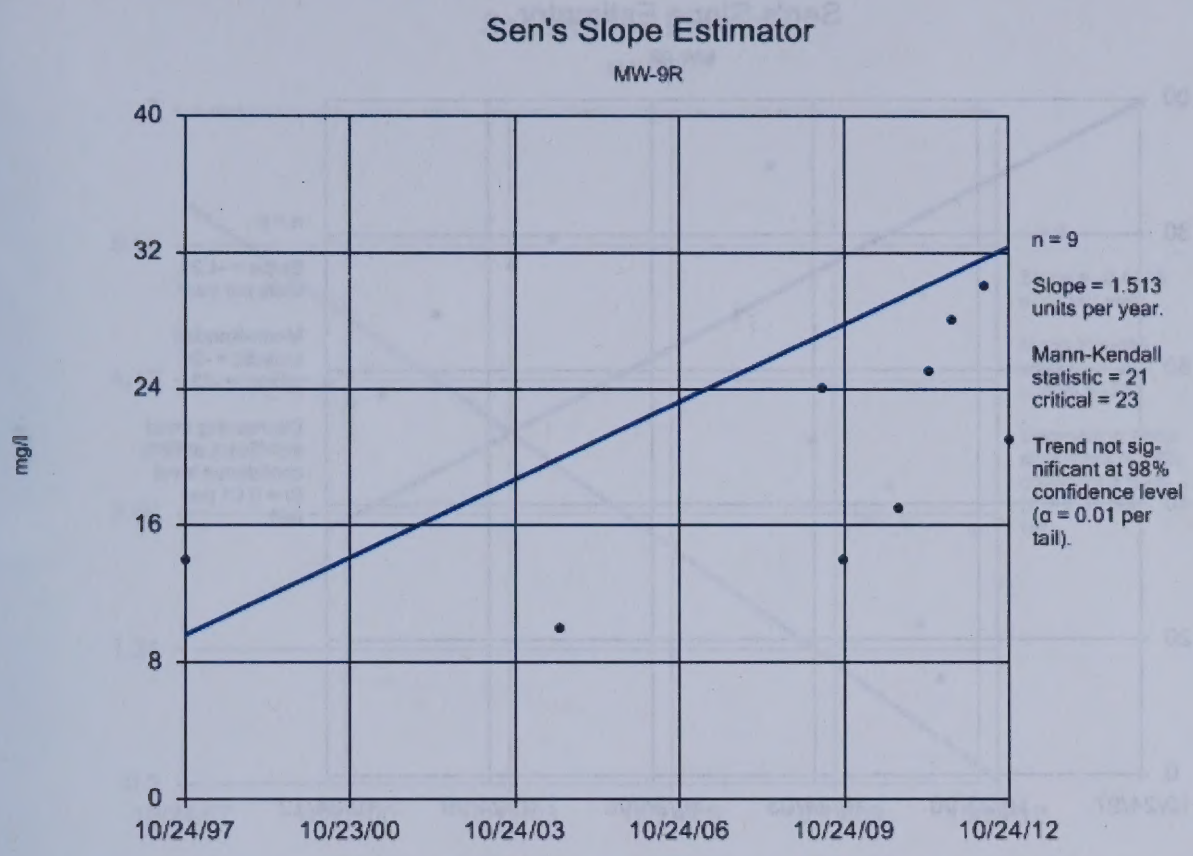


Figure F-14: Trend Analysis for Chloride in MW-OW

v.9.0.34 For regulatory purposes only. EPA

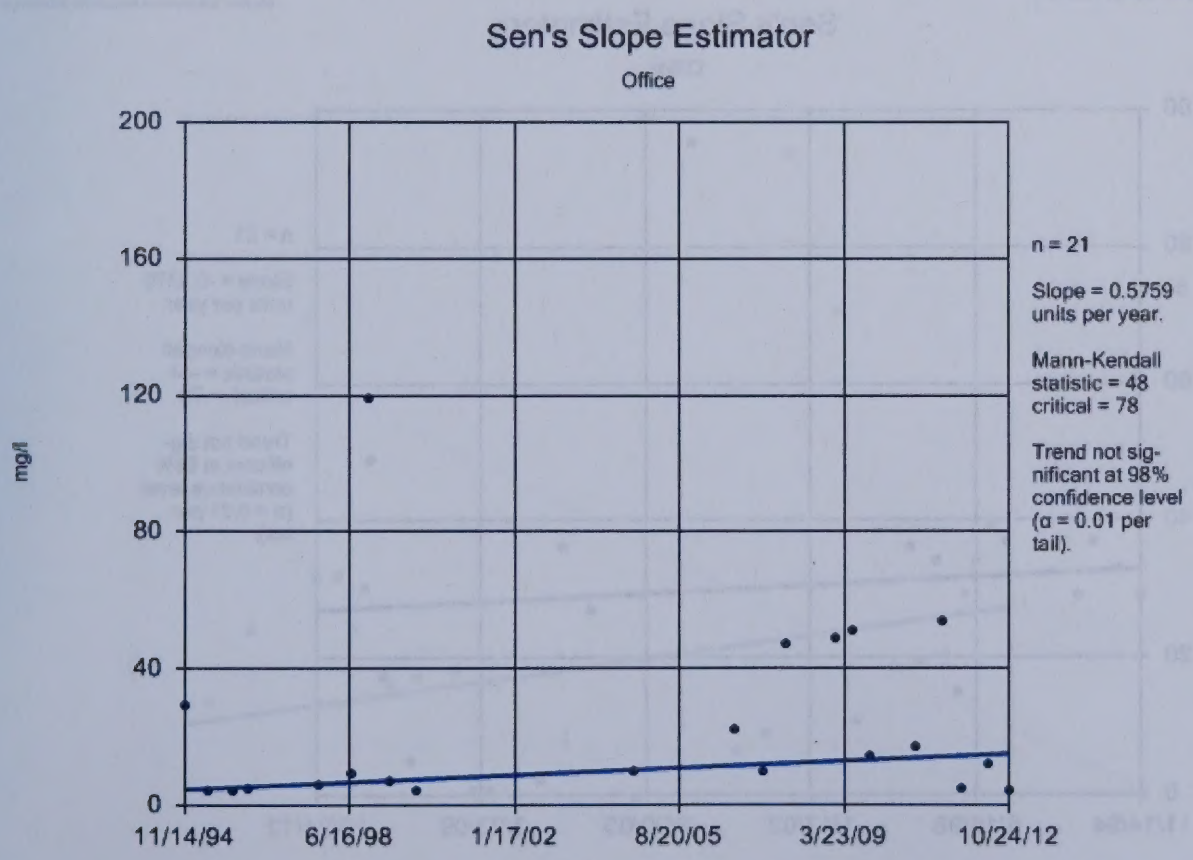


Figure F-15: Trend Analysis for Sulfate in MW-9R

v.9.0.34 For regulatory purposes only. EPA

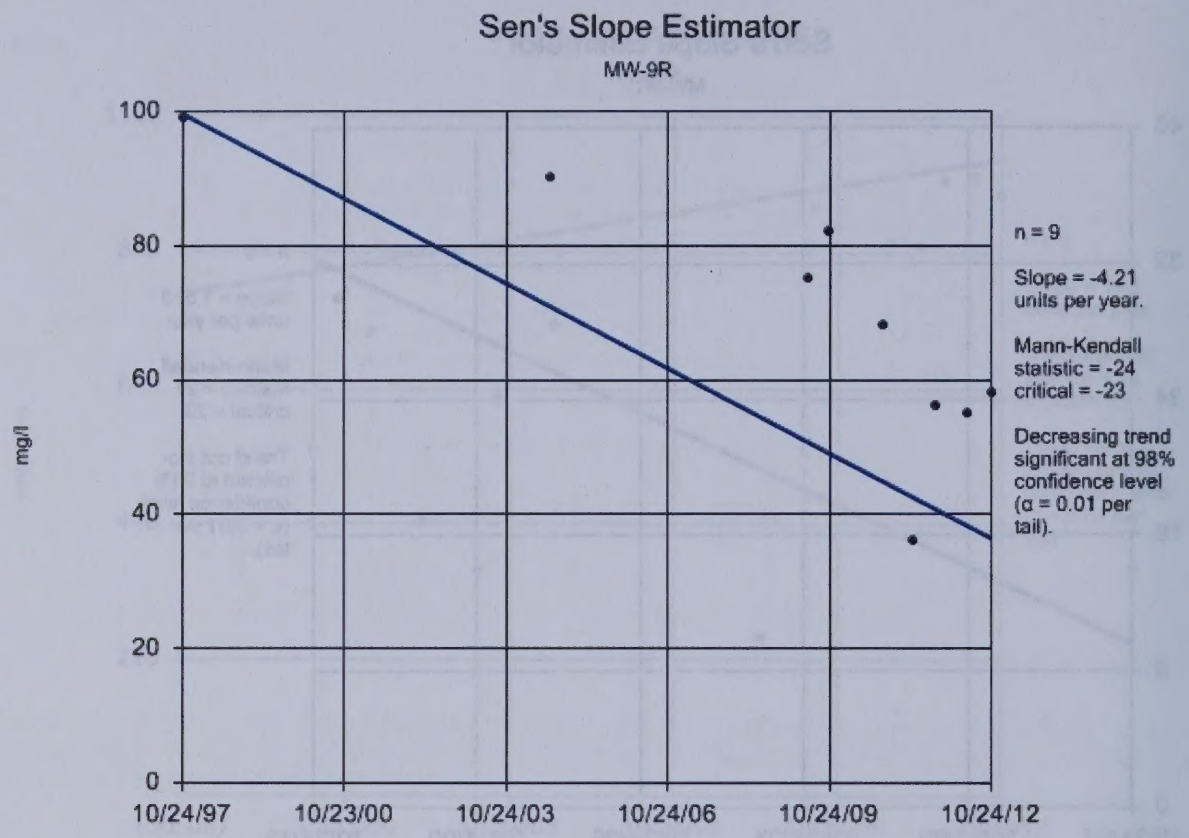


Figure F-16: Trend Analysis for Sulfate in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

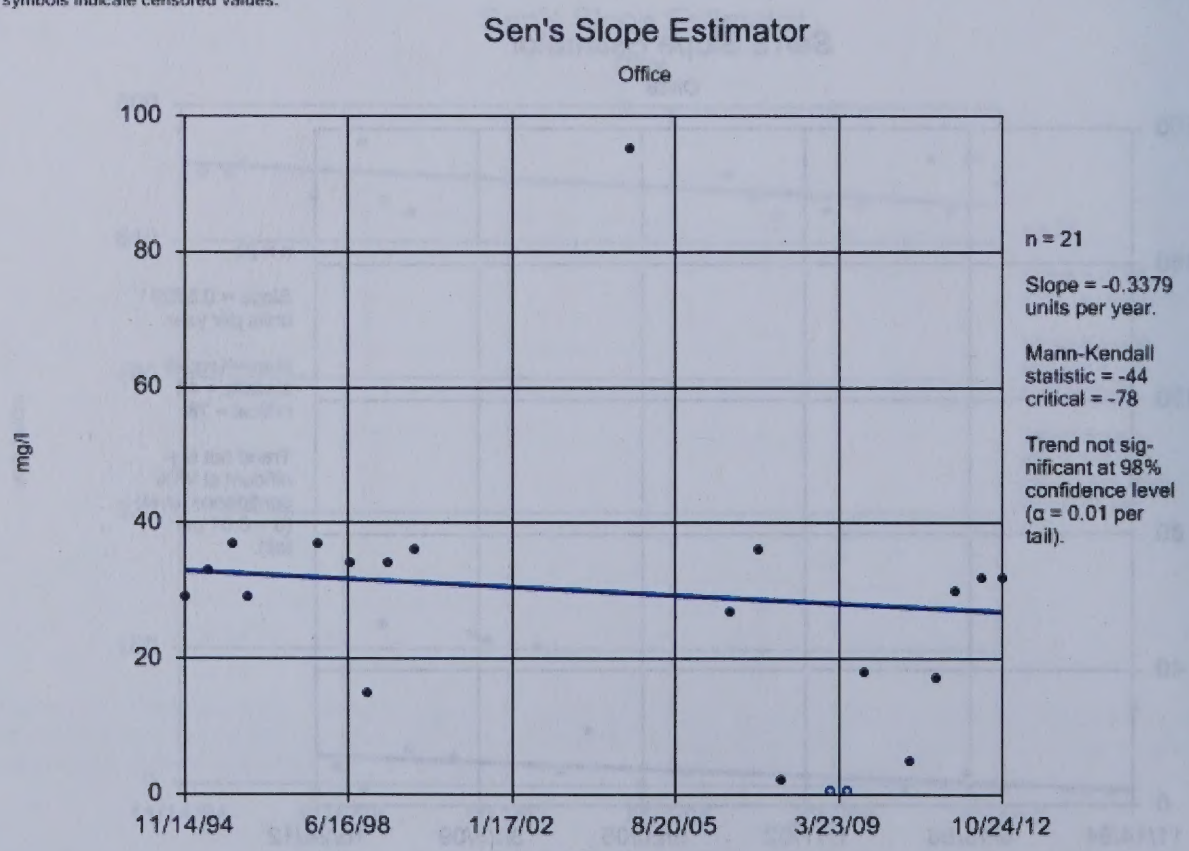


Figure F-17: Trend Analysis for Nitrate + Nitrite in MW-9R

v.9.0.34 For regulatory purposes only. EPA

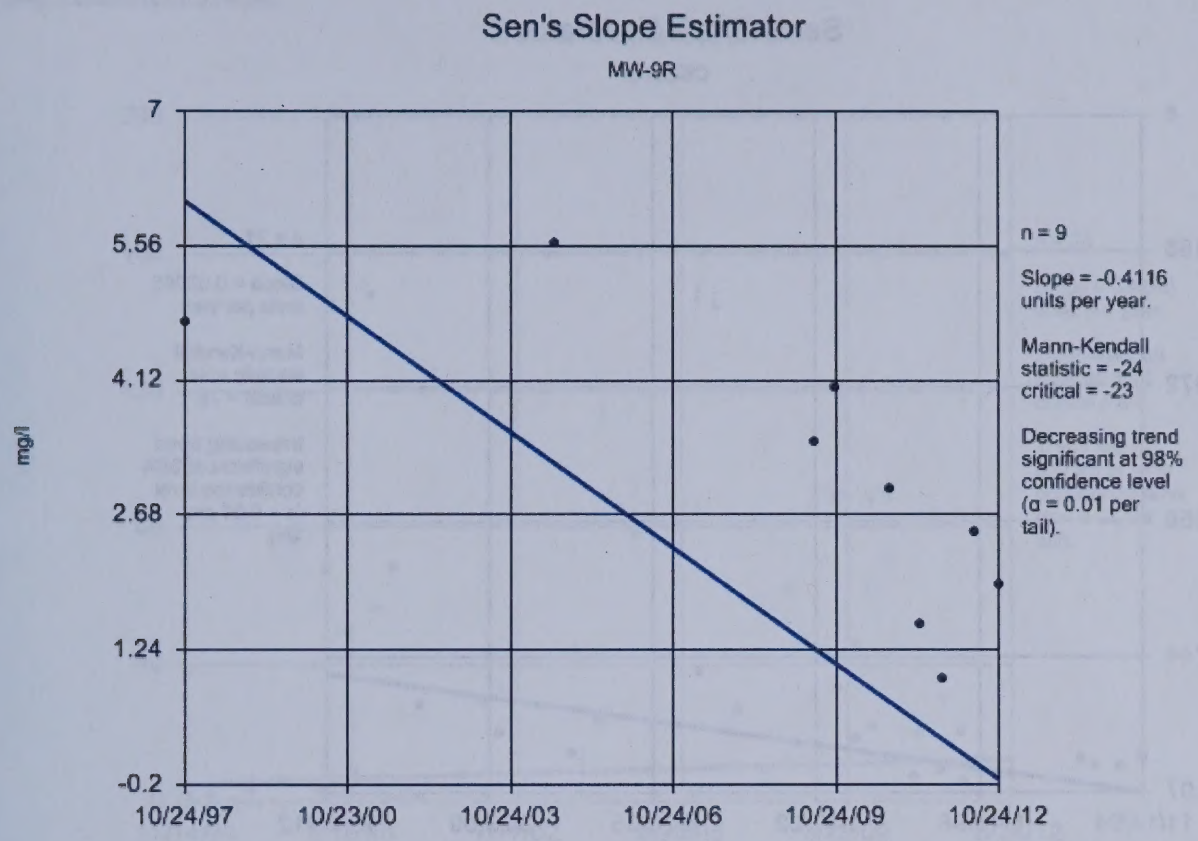


Figure F-18: Trend Analysis for Iron in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

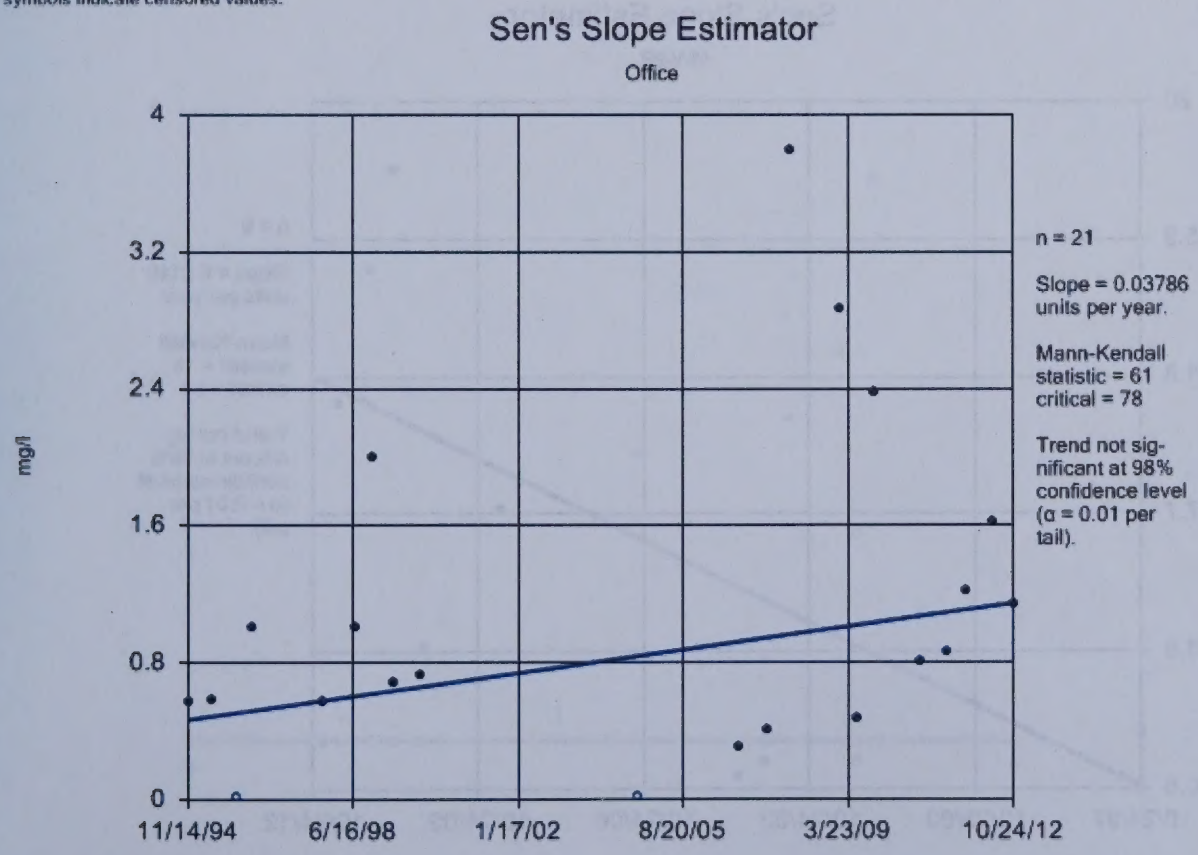


Figure F-19: Trend Analysis for Zinc in MW-OW

v.9.0.34 For regulatory purposes only. EPA

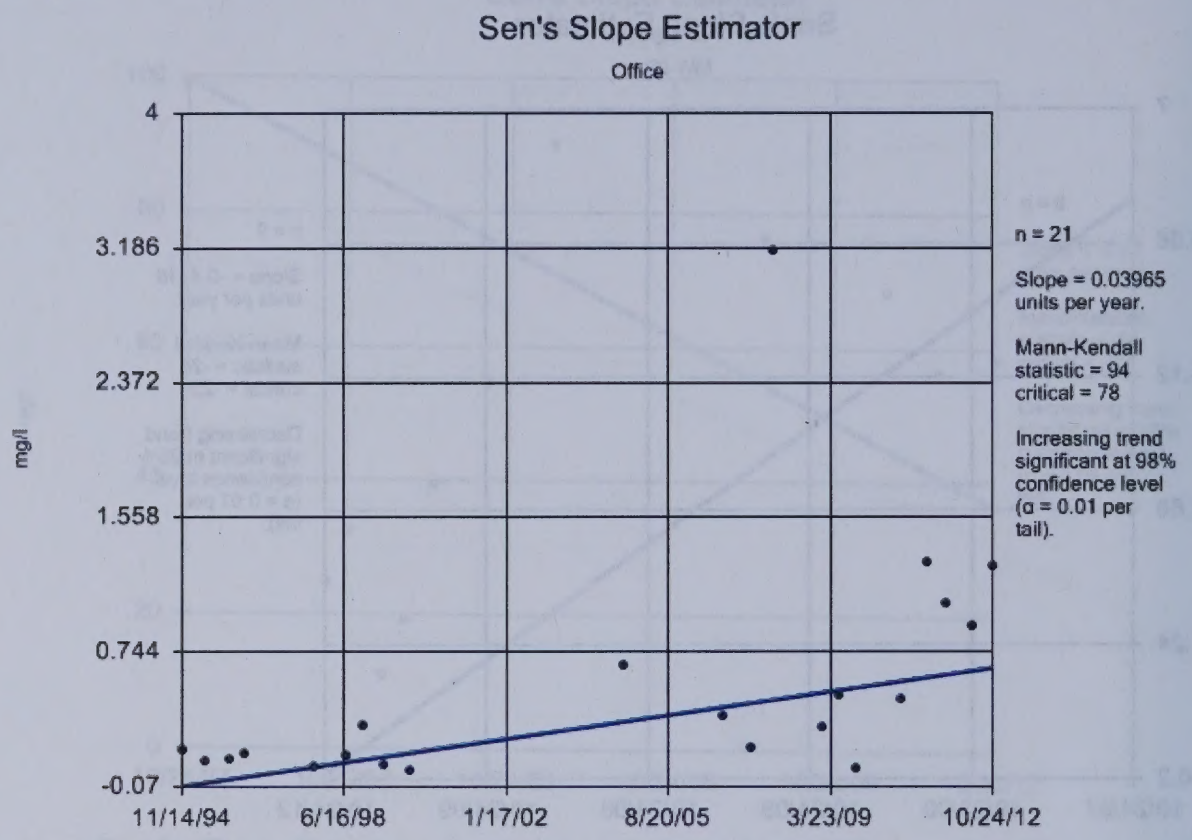


Figure F-20: Trend Analysis for cis-1,2-Dichloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA

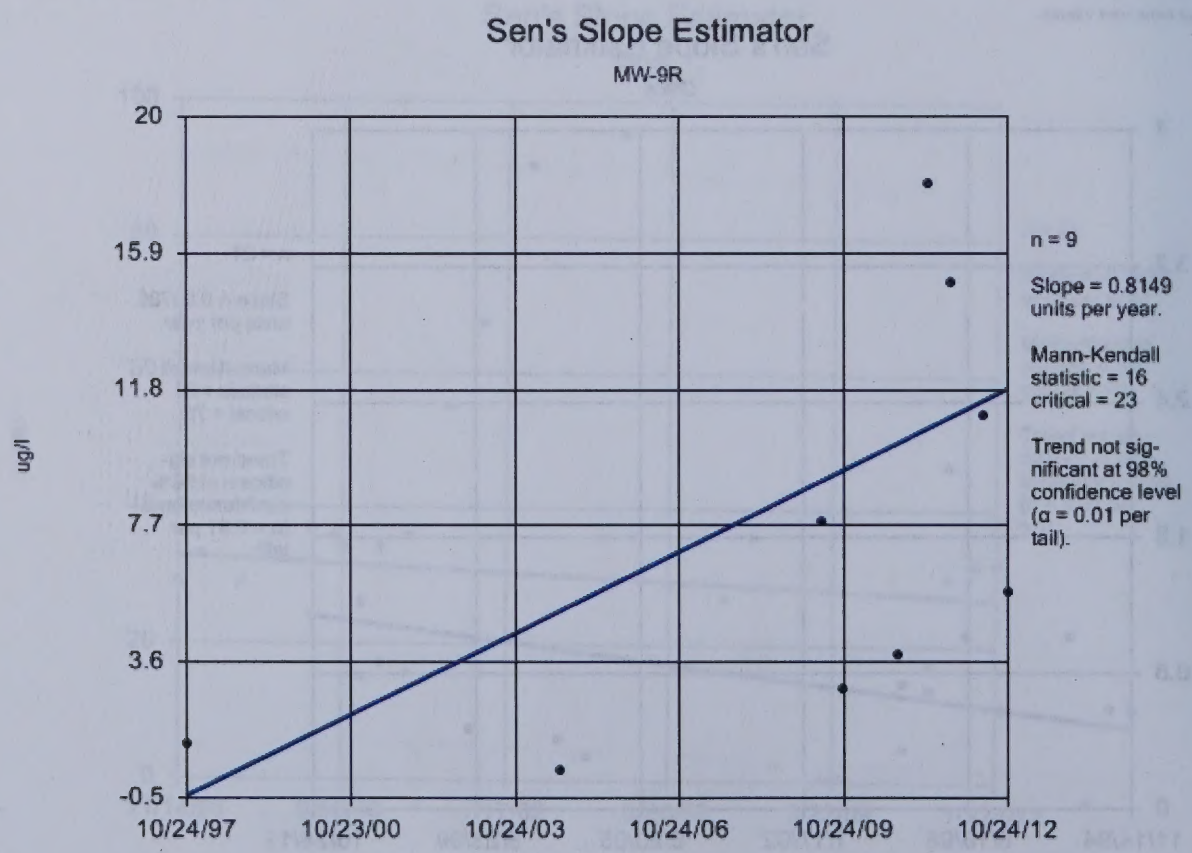


Figure F-21: Trend Analysis for cis-1,2-Dichloroethene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

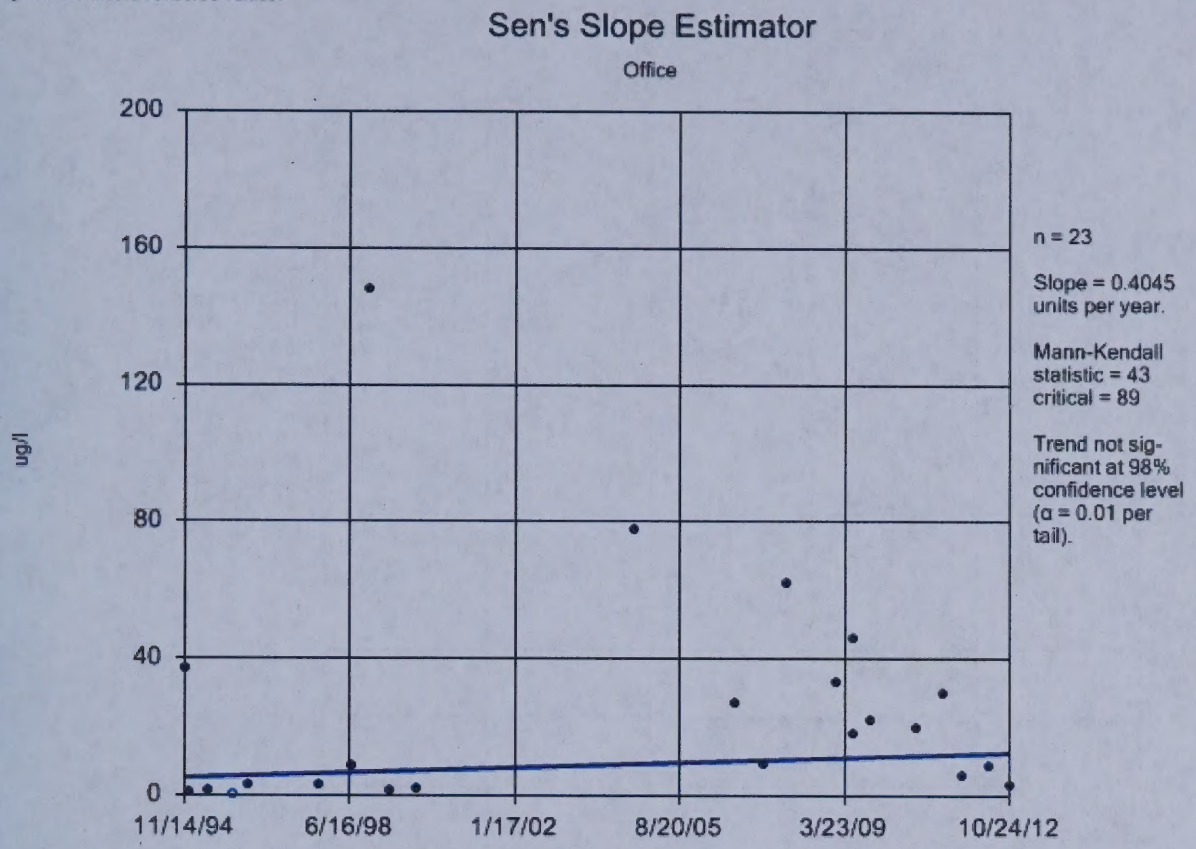


Figure F-22: Trend Analysis for Ethyl benzene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

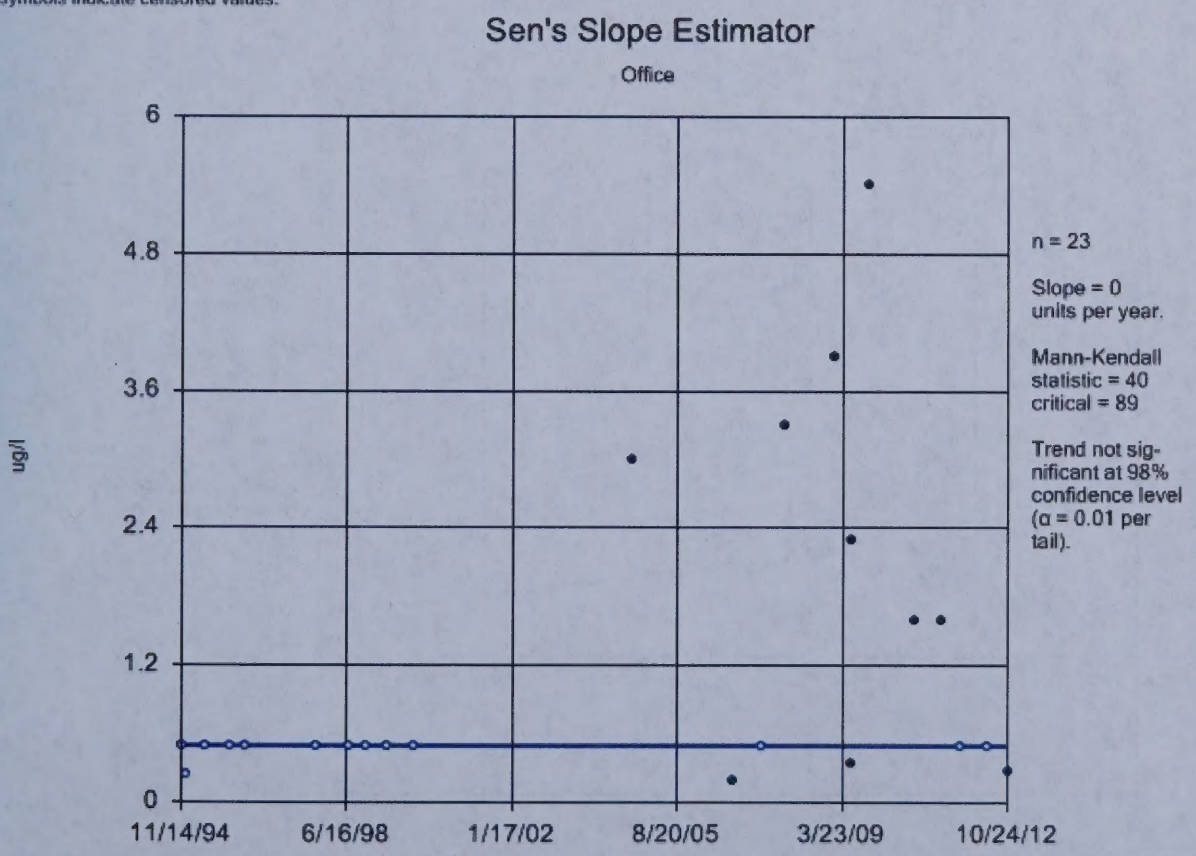


Figure F-23: Trend Analysis for Styrene MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

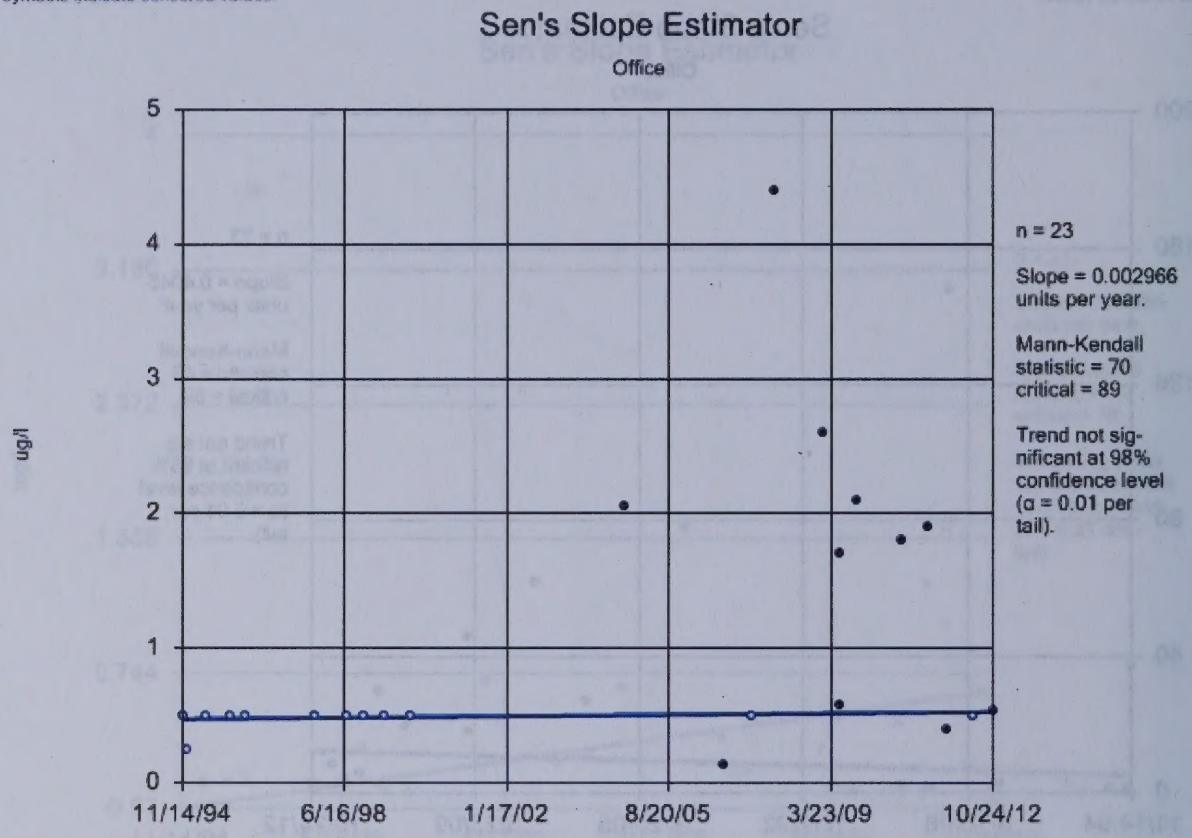
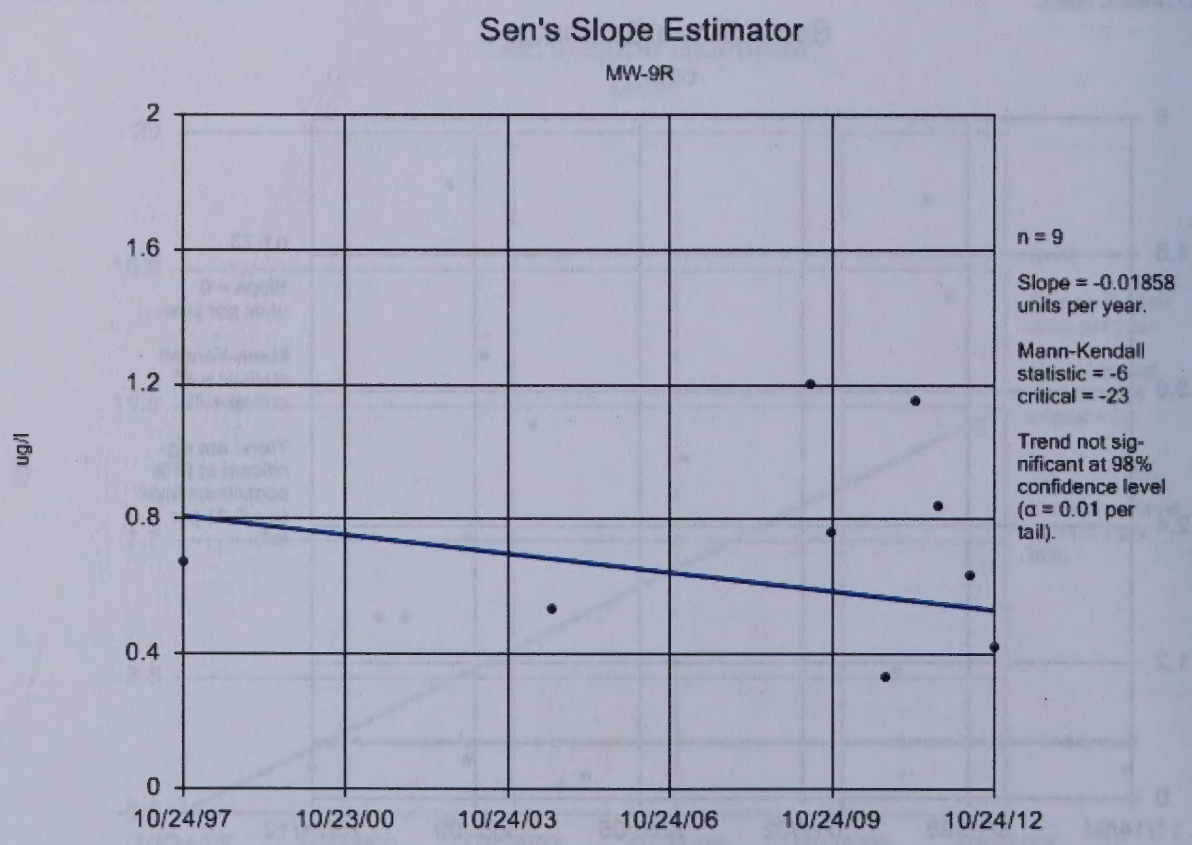


Figure F-24: Trend Analysis for Tetrachloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA



Closed

County Fergus

Facility & # Mister M #302

Closure	Landfarm
Finan Assur	Liner
GW Corr Meas	Methane
GW Monitoring	O & M
GW Reports	Run-on
Inspections	

Other: _____

CLOSED MISTER M LANDFILL, LICENSE #302
LEWISTOWN, FERGUS COUNTY, MONTANA

MAY 2012 GROUNDWATER MONITORING RESULTS AND STATISTICAL ANALYSES

Prepared By:

Montana Department of Environmental Quality

Solid Waste Section

July 13, 2012

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Groundwater monitoring at the closed Mister M Landfill, License #302, was conducted in May 2012 by the Montana Department of Environmental Quality (MDEQ), Solid Waste Section, according to the July 2011 Sampling and Analysis Plan for Methane and Groundwater (SAP) (MDEQ, 2011 [2]). The Mister M Landfill is located in Fergus County, Montana, approximately four miles east of Lewistown on US Highway 87, as shown in Figure 1. As shown in Figure 2, the landfill lies in a small south facing coulee which drains to Boyd Creek. The facility received Class II wastes from 1956 to 1998, and was granted interim closure status on December 5, 2000. The current owners, Marvin and Sandra Mintyala, operated the facility from 1974 until approximately 2000, when the site was abandoned.

According to the Geohydrologic Characterization (Gillespie, 1993 revised; and Gillespie, 1994) the landfill is underlain by the Kootenai Formation, which consists of predominately shale with some silty sandstone. A basal unit of sandstone in the Kootenai formation is the uppermost aquifer in the area. Minor amounts of water have been encountered in the upper portions of the Kootenai Formation but most of the monitoring wells completed in the upper Kootenai Formation at the site have frequently been dry or contained minimal volumes of water.

Previous groundwater sampling at the facility was conducted by the owners or their consultants from 1993-1999 (Gillespie, 1995 and 1996; Energy Laboratories, 1997, 1998 [1], and 1998 [2]; and Portage Environmental, 1999 and 2000). From 2003-2007 Tetra Tech, Inc was authorized by the MDEQ to conduct groundwater monitoring in the absence of action by the owners (Energy Laboratories, 2003, 2004, 2005, 2006, and 2007; Maxim, 2005; Tetra Tech, 2006 and 2008). MDEQ Solid Waste Section personnel have conducted groundwater monitoring from January 2009 to the present (MDEQ, 2009 [1]; 2009 [2]; 2010 [1]; 2010 [2], 2011 [1], 2011[3]).

2.0 FIELD PROCEDURES

MDEQ Solid Waste Section personnel conducted monitoring activities on May 22 and 23, 2012, including monitoring well inspections, static water level (SWL) measurements, and groundwater sample collection as part of the assessment monitoring program currently in effect for the facility. The locations of the monitoring points and the activities that were performed at each point are shown in Figure 3. Copies of the field notes are included in Appendix A. All field activities described in this report were conducted in accordance with the approved July 2011 SAP, and any deviations from the SAP are described herein. The analysis of groundwater samples was conducted by Energy Laboratories Inc, in Helena, Montana.

2.1 WELL INSPECTIONS

The monitoring wells currently in use were inspected on May 22, 2012. MW-OW does not have an external casing and the new locking cap installed in April 2009 is already showing significant weather wear. All other monitoring wells are in good condition.

2.2 WATER LEVEL MEASUREMENTS

Static water levels were measured on May 22, 2012, in wells MW-5, MW-6, MW-9R, MW-11, MW-12, and MW-OW using an electric water level meter. The total depths of wells MW-9R, MW-11, and MW-12 were also recorded.

2.3 GROUNDWATER SAMPLING

Groundwater samples were collected May 22 and 23, 2012, from wells MW-9R, MW-11, MW-12, MW-HW, and MW-OW. A field duplicate was collected from well MW-12. At each well that was sampled, samples were collected for all of the parameters listed in the SAP.

The wells were purged and sampled following the procedures in the SAP with the deviations described below. Copies of the Monitoring Well Purging and Sampling Forms for each well are included in Appendix A. All of the wells were purged and sampled using disposable bailers.

Well MW-12 was flowing at the time of sampling, thus the total volume purged consisted of the volume of water bailed from the well plus the estimated volume which flowed from the well prior to and during the bailing process. Field water quality measurements were made using a rented YSI model 556-02 water quality meter, which was calibrated by TRS Environmental prior to shipment.

After collection, the samples were labeled as described in the SAP and were stored on ice in a laboratory supplied cooler. The samples were stored according to chain-of-custody requirements and hand delivered to Energy Laboratories Inc in Helena, Montana on May 24, 2012.

3.0 Monitoring Results

3.1 Groundwater Levels and Flow

The water levels in May 2012 ranged from 1.00 to 5.77 feet higher than the October 2012 measurements, and 17.77 feet lower to 4.10 feet higher than the May 2011 measurements. All of the monitoring wells at the site have shown a consistent trend of higher water levels in the spring and lower in the fall, due to seasonal precipitation and snowmelt, except for well MW-11 where the water level has risen for all four measurements since installation of the well in October 2010. The reason for this difference in MW-11 is unknown. May 2012 water levels were on average much lower than May 2011 levels due to lower winter and spring precipitation. Figure 4 displays the May 2012 static water levels on a map. No attempt was made to contour the static water levels as the shallow wells are completed in minor water bearing zones of unknown horizontal extent and connectivity, and the water level measurements made in the deep water bearing zone are from wells that have not yet been surveyed. Groundwater flow in the shallow water bearing zones likely follows local topography and flows in a south to southwest direction. Groundwater flow in the deep water bearing zone is assumed to be to the southwest based on records from domestic wells in the area. Copies of the Water Level Measurement Forms are included in Appendix A. Tables containing historic water levels and hydrographs for both the shallow and deep water bearing zones are included in Appendix B.

3.2 Data Validation

Upon receipt from the laboratory, the analytical results were validated as described in the SAP to ensure that the data quality objectives had been met. The samples were received by the laboratory at a temperature of 4.6°C. The pH of all samples was within acceptable limits. All samples were analyzed within the required holding times. The relative percent difference for all field and laboratory duplicates were within control limits. All laboratory control samples and blanks were acceptable, with the exception of Carbon disulfide in a sample matrix spike. Carbon disulfide was detected below the reporting limit in the samples from MW-9R, MW-11, and one of the samples from MW-12, and is considered to most likely be a result of sample

contamination, although no results are flagged. No VOCs were detected in the Trip Blank. A copy of the laboratory QA/QC report is included in Appendix C.

3.3 Groundwater Analytical Results

The following sections discuss the analytical results grouped by analyte type. A copy of the laboratory analytical report is included in Appendix D. Historical concentration plots for all parameters detected during this sampling event and a table containing historical analytical results are included in Appendix E.

3.3.1 Indicator Parameters

Groundwater at the facility has a neutral to slightly alkaline pH, with values from 7.0 to 7.3 reported for this event. Specific conductance ranged from 650 µmhos/cm in the sample from MW-11 to 1,000 µmhos/cm in MW-9R. The concentrations Sulfate and Chloride increased slightly in all wells, with a couple exception described below. The concentration of Chloride increased in MW-OW from 5 to 12 mg/L, but remained close to typical concentrations in MW-HW and well below previous highs for MW-OW. Sulfate (55 mg/L) decreased slightly in MW-9R. The concentration of Chloride (30 mg/L) in MW-9R is the highest recorded at this well. Nitrate + Nitrite was not detected in MW-11 and MW-12. Nitrate + Nitrite was detected at very low concentration (0.05 mg/L) in MW-HW. Nitrate + Nitrite has been detected previously in MW-HW at similar concentrations. Nitrate + Nitrite was also detected at a concentration of 2.49 mg/L in MW-9R, well below the maximum contaminant level (MCL) of 10 mg/L and slightly lower than typical values at MW-9R. This concentration is also similar those observed in the shallow background well MW-5 in previous sampling events and in other shallow wells.

3.3.2 Dissolved Metals

Two metals were detected in facility wells during this sampling event. Iron was detected in MW-11, MW-12 and its duplicate, and MW-OW at 0.22, 0.63, 0.63, and 1.62 mg/L respectively, and showed small increases from the October 2011 sample results. The values for MW-11 and MW-12 are typical for deeper aquifer wells, and the value for MW-OW is only higher than typical deeper aquifer values. The concentrations in MW-12 and MW-OW are greater than the

secondary MCL for Iron of 0.3 mg/L. Zinc was detected in MW-OW at 0.90 mg/L and in MW-HW at 0.04 mg/L. The concentration of Zinc at MW-HW is typical for that well. The zinc concentration in MW-OW was higher than typical values for that well.

3.3.3 Volatile Organic Compounds

Two VOCs were detected in MW-OW during this sampling event, compared with 3 in May 2011. Both of these compounds (concentrations in μg/L), cis-1,2-Dichloroethene (8.9) and Vinyl chloride (0.22 J) have been routinely detected in MW-OW. The concentration of cis-1,2-Dichloroethene increased slightly from the October 2011 sampling event, but remained below previous levels for that well. Vinyl chloride was not detected in October 2011, but the current concentration is well below previously detected levels. Five VOCs were detected in MW-9R: Carbon disulfide (0.59 J), Tetrachloroethene (0.63 J), Trichloroethene (0.46 J) cis-1,2-Dichloroethene (11), and 1,1-Dichloroethane (0.44 J). All of these compounds have been detected previously in MW-9R, with the exception of Carbon disulfide and 1,1-Dichloroethane. As described in Section 3.2, Carbon Disulfide was also detected in wells MW-11 and MW-12, and exceeded control limits in a matrix spike analysis, and thus is thought to be the result of sample contamination. The concentrations of the chlorinated solvents are similar to previous levels at this well. No VOCs, except Carbon disulfide, were detected in MW-11, MW-12, or MW-HW. VOC's have not been typically detected in MW-11 and MW-HW, however cis-1,2-Dichloroethene had been detected at low concentrations in MW-12 during the October 2010 and May 2011 sampling events.

4.0 Statistical Analysis

4.1 Statistical Methods

The statistical analyses were performed using the statistical software package Sanitas v.9.0.34. The validated analytical data was first screened to determine which parameters required statistical analysis. Only parameters which were detected in one or more compliance wells (MW-11 and MW-12) and had been historically detected at least once in the background well (MW-HW) were analyzed using an interwell prediction limit. If a parameter was detected in a compliance well, but was always non-detected in the background dataset, the background value was set as the detection limit and any detection of that parameter was considered a statistical exceedance of background. As a result of the screening described above, the parameters selected for statistical analysis were: pH, SC, Chloride, Sulfate, and Iron.

The background dataset was screened to determine if trends were present using the Sen's Slope/Mann Kendall test. Analysis of the data for Choride and Sulfate in the MW-HW indicated statistically significant trends, thus the background dataset was reduced to include only non-trending data. For Chloride the data from 6/10/1980 was excluded, and for Sulfate the data from 6/10/1980 to 12/2/1999 were excluded.

Each selected parameter was compared to the background dataset using an inter-well prediction interval analysis. The Sanitas software determines the distribution of the background dataset and performs the appropriate statistical test for that distribution. If the prediction interval analysis indicated an exceedance of background levels, a Sen's Slope/Mann Kendall test was conducted to analyze any trends in the data. All of the statistical tests were performed at a 95% site-wide confidence level, or the maximum confidence level that was possible given the size of the background dataset if a 95% confidence level was not possible.

A Sen's Slope/Mann Kendall test was also conducted on all parameters detected in the assessment monitoring wells (MW-9R and MW-OW) to analyze any trends in the data.

4.2 Analysis Results

Table 1 contains a summary of the results of the statistical analyses. The full results of the statistical analyses are included in Appendix F. Due to the small size of the background dataset the site-wide confidence levels for non-parametric tests were less than 95%. The tests for Sulfate had a site-wide confidence level of 84.62%., and the tests for Iron had a site-wide confidence level of 91.30%.

The values from the current sampling event for all parameters in compliance wells MW-11 and MW-12 were within prediction limits.

Trend analyses for well MW-9R indicated significant trends for Chloride and Sulfate, with Chloride increasing and Sulfate decreasing. The cause of these trends is unknown. A significant increasing trend was noted for pH at well MW-OW. A review of pH data indicates the trend in pH at MW-OW is similar to that at the background well, MW-HW, indicating a natural cause is likely for this trend. A significant increasing trend was also noted for Zinc in MW-OW. Metals contamination in MW-OW is thought to be a result of previous use of the well as a water supply well, and the increase in Zinc may be due to continued corrosion of metal components which may remain in the well.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Groundwater monitoring was conducted by the MDEQ at the Mister M Landfill on May 22 and 23, 2012. Water levels were measured in six wells, and groundwater samples were collected from five wells. All currently used wells were inspected.

The static water levels measured during the May 2012 event increased on average from the October 2011 event. These seasonal variations in water level are evidence that a relatively direct connection may exist between the surface and groundwater. Water levels will continue to be monitored semi-annually in the future to provide additional data on water level trends.

Five VOCs were detected in MW-9R at similar levels that the October 2011 sampling event. The contaminants present in MW-9R are different than those seen in MW-OW indicating that the contamination may be from a different source or MW-9R may be closer to the source area than MW-OW; however the precise source of these VOCs is unknown. Additional data is needed to evaluate the contamination in that well. Well MW-9R will continue to be sampled in future events for Inorganics and VOCs. MW-HW was sampled during this event. Additional background data from this well will be useful for evaluating the results from the other deep wells. MW-HW will continue to be sampled on a regular basis to increase the background dataset size for the compliance wells. Well MW-OW continues to show both inorganic and organic contamination. Sulfate and Chloride have returned to near normal levels. Zinc and Iron concentrations are variable but remain above normal levels. These metals are possibly the result of previous down-hole equipment associated with the use of MW-OW as a water supply well and not due to landfill leachate. VOCs continue to be detected in MW-OW at generally low levels, but the number of VOCs detected and the concentrations measured during the May 2012 sampling event similar to the October 2011 event and were much lower than previous recent sampling events. MW-OW will continue to be sampled to track concentration trends. The new monitoring wells continue to show general chemistry similar to the other deep wells indicating that they are completed in the same deeper aquifer.

The analytical results from compliance wells MW-11 and MW-12 show no impacts from landfill leachate. The one VOC, cis-1,2-Dichloroethene, which was previously detected at a very low level in MW-12 was not detected during the past two sampling events. All parameters in the compliance wells have been below background levels during the past two sampling events, thus according to ARM 17.50.1307(5) the facility may return to detection monitoring. MW-11 and MW-12 will continue to be sampled as the point of compliance wells for the facility. The next groundwater sampling event will be conducted in October 2012.

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TABLES

Table 1: Summary of Results of Statistical Analyses

		Prediction Interval Analysis					Trend Analysis	
Parameter	Well	Distribution	Confidence Level (%)	Prediction Limit(s)	Result	Exceeds Limit?	Slope (per yr)	Significant ?
pH	MW-9R	N/A	N/A	N/A	7.0	N/A	-0.039	No
	MW-11	normal	98.75	6.91-8.06	7.3	No	N/A	N/A
	MW-12	normal	98.75	6.91-8.06	7.1	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	7.2	N/A	+0.026	Yes
SC	MW-9R	N/A	N/A	N/A	1000	N/A	+14.5	No
	MW-11	normal	97.5	861.2	650	No	N/A	N/A
	MW-12	normal	97.5	861.2	720	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	740	N/A	-2.95	No
Chloride	MW-9R	N/A	N/A	N/A	30	N/A	+2.118	Yes
	MW-11	normal	97.5	12.1	3	No	N/A	N/A
	MW-12	normal	97.5	12.1	4	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	12	N/A	+0.667	No
Sulfate	MW-9R	N/A	N/A	N/A	55	N/A	-4.573	Yes
	MW-11	non-normal	91.99	77.5	41	No	N/A	N/A
	MW-12	non-normal	91.99	77.5	32	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	32	N/A	-0.731	No
Nitrate+Nitrite	MW-9R	N/A	N/A	N/A	2.49	N/A	-0.385	No
Iron	MW-11	non-normal	95.55	0.75	0.22	No	N/A	N/A
	MW-12	non-normal	95.55	0.75	0.63	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	1.62	N/A	+0.040	No
Zinc	MW-OW	N/A	N/A	N/A	0.90	N/A	+0.030	Yes
Carbon disulfide	MW-9R	N/A	N/A	N/A	0.59J	N/A	0	No
	MW-11	N/A	N/A	N/A	0.26J	N/A	+0.083	?
	MW-12	N/A	N/A	N/A	0.335J	N/A	+0.069	?
1,1-Dichloroethane	MW-9R	N/A	N/A	N/A	0.44J	N/A	0	No
cis-1,2-Dichloroethene	MW-9R	N/A	N/A	N/A	11	N/A	+1.039	No
	MW-OW	N/A	N/A	N/A	8.9	N/A	+0.661	No
Tetrachloroethene	MW-9R	N/A	N/A	N/A	0.63J	N/A	+0.002	No
Trichloroethene	MW-9R	N/A	N/A	N/A	0.46J	N/A	+0.032	No
Vinyl chloride	MW-OW	N/A	N/A	N/A	0.22J	N/A	0	No

Notes:
ND = Non-detect
N/A = Not applicable
? = Insufficient data for test

FIGURES

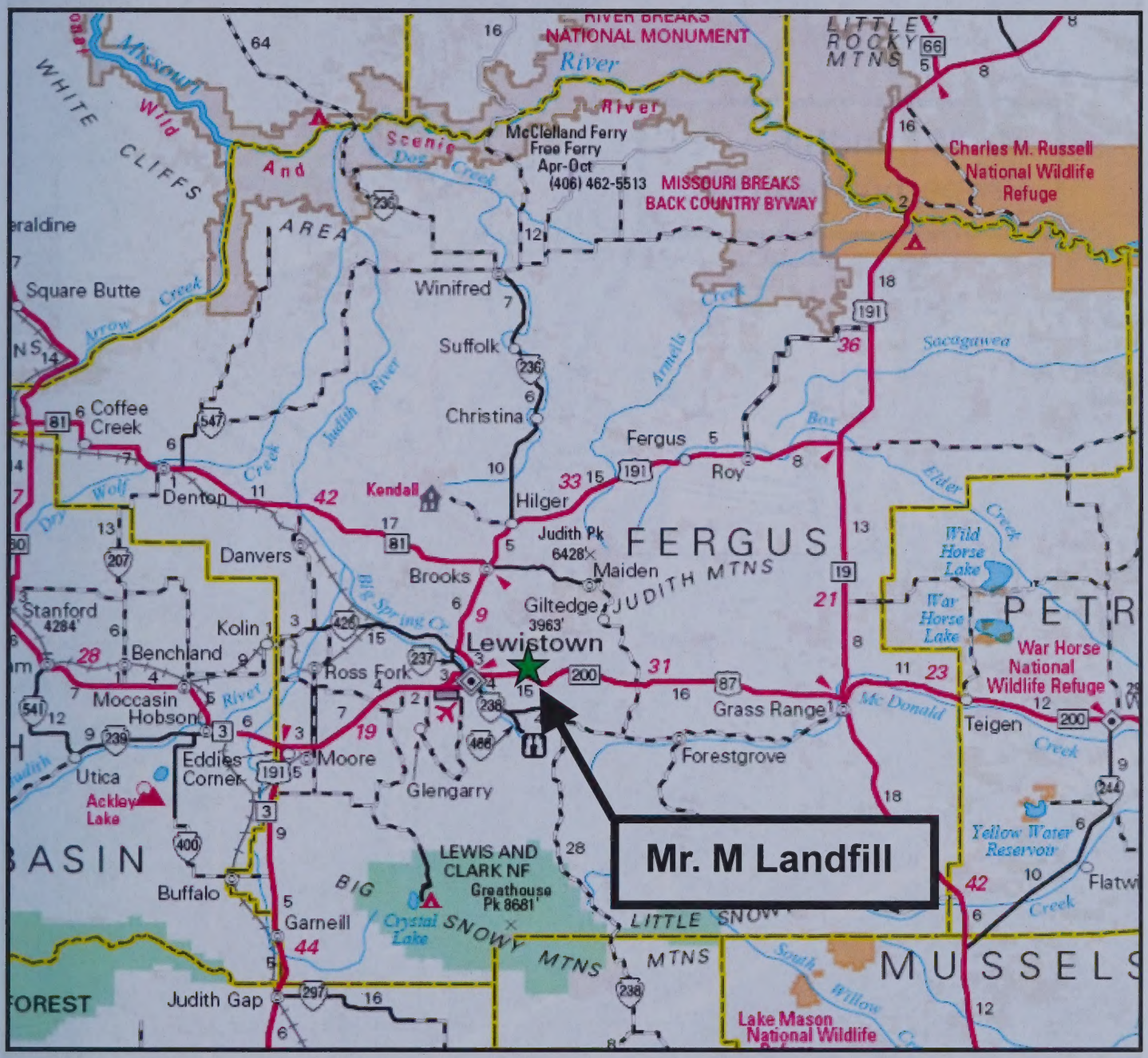


Figure 1: Location Map

Adapted from State of Montana Highway Map.

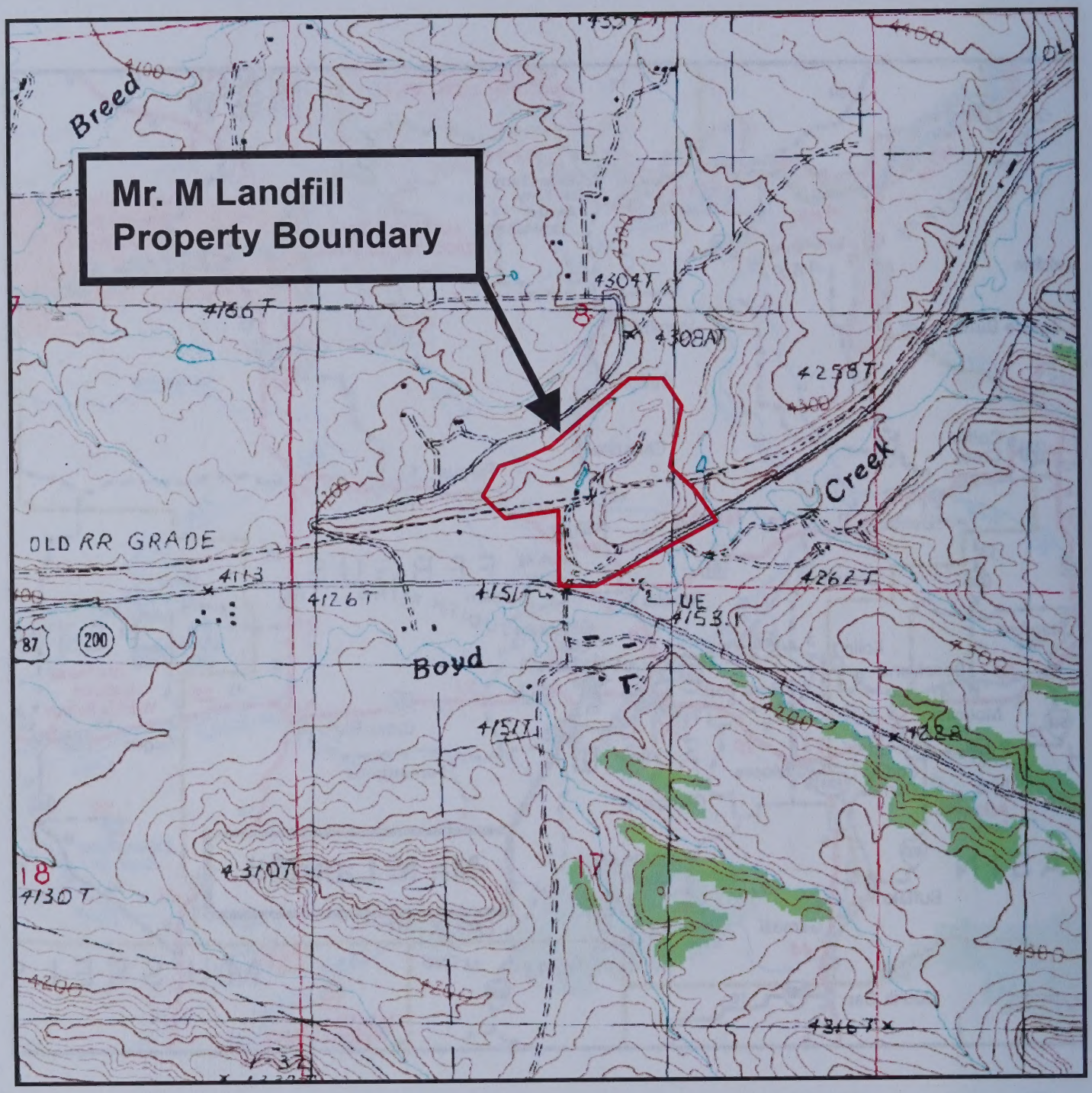


Figure 2: Facility Map

Adapted from USGS Pike Creek 24k Quadrangle.

Figure 3: Locations of Monitoring Points

Base Aerial Photo from 2004.

Figure 4: Groundwater Levels

Base Aerial Photo from 2004.

The reference elevations for MW-9R, MW-11, MW-12, and MW-OW are estimated from topographic contours and field observations.

APPENDIX A: FIELD NOTES & FORMS

5/22/12 Martin VanOort

1105 Arrive on site
Gate is down & irreparable
1115 Checking drainage improvements for erosion (photos)
Slight Rill forming ~~[illegible]~~ spillway of large pads
Sinkhole by shop
Moderate erosion on slope by MW-12
Settlement near intake
Grass is sprouting but more weeds than grass.
1140 Prepared for CH4 & SWL monitoring
Replace batteries in CH4 meter & calibrate
O_2 sensor had to be calibrated 3x before success, may need service
1205 O_2 = 19.5
MW-1
O_2 = — LEL = 0
H_2S = 0.4 ± 0 CO = 0
O_2 varying widely, not useable
1208 MW-12 SWL = flowing

5/22/12 Martin VanOort

1210 Lower MW-12 open to flow
1214 MW-2
LEL = 0 H_2S = 0 CO = 0
1220 MW-NW SWL = 22.52
1222 MW-9R SWL = 35.01
1232 MW-6M
LEL = 0 H_2S = 0 CO = 0
1235 MW-6 SWL = 92.45
1240 Large seep barely flowing (photos)
1247 MW-5M
LEL = 11.0 H_2S = 0 CO = 0
O_2 ↓ 2.5
1257 MW-5 SWL = 94.26
1304 North Vent
LEL = 9.5 H_2S = 0 CO = 0
CH4 varies 2.5-9.5 Avg ~5.5
1309 South Vent
LEL = 0 H_2S = 0 CO = 0
1317 East side of west drainage ditch has slumped (photo)
Seep at toe is almost inactive
1334 At MW-9R
Setting up
1355 Start purge

Rita in the Rain

5/22/12 Martin Van Oost

1441 Purge Day
Starting to rain
1446 Heavy rain & thunder
Move to MW-OW & wait
for storm to pass
1457 Very heavy rain + wind
1525 Letting up
Start set up at MW-OW
1528 Heavy rain again
1545 Letting up again
Heading to MW-11 for SWL
1550 MW-11 SWL = 24.32
1553 Setting up at MW-OW
1615 Raining hard again
1627 Start purge
1820 Sample MW-OW
VOCs, Cl^-, SO_4^{2-}, Fe, Zn, pH, Cond
1832 Cleaning up
1855 Leave site

5/23/12 Martin Van Oost

730 Guy In. & Gordon Pine
750 On site
755 At MW-9R preparing for
sampling
820 Sample MW-9R
VOCs, Cl^-, SO_4^{2-}, N+N, pH, Cond
842 Finished, cleaning up
852 Setting up at MW-11
914 Start purge
1110 Sample MW-11
VOCs, Cl^-, SO_4^{2-}, Metals, pH, Cond
1130 Done, cleaning up
1145 Lunch
1240 Setting up at MW-12
1310 Start purge
Flowing 10 lb. in 25 sec
0.10392 gal/min 2.3472 gal/hr
~58.68 gal flowed from 1210 5/22 to
1310 5/23
1430 Collected MW-12 sample (Dup 1435)
VOCs, Cl^-, SO_4^{2-}, metals, pH, Cond
1446 Finished, cleaning up
1506 At MW-11W, setting up
1529 Start purge MW-11W

"Rite in the Rain"

5/23/12 Martin's Vineyard

1543 Increase rate to max ~10 gpm

1605 Sample MW-41W

VOCs, Cl^-, SO_4^{2-}, Metals, pH, cond.

1610 Finishing, cleaning up

1630 Leave site

"Rite in the Rain"

Water Level Measurement Form

Site Name: Mister M Landfill Date: 5/22/12

Personnel: Martin Van Oort Equipment: Slope indicator

Field Conditions: Partly cloudy, breezy, warm

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-12	1208	flowing			very slow flow
MW-OW	1220	22.52			
MW-9R	1222	35.01			
MW-6	1235	92.45			
MW-5	1257	94.26			
MW-11	1550	24.32			

Notes:

Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mr. M Landfill Sample Location: MW-OW

Personnel: Martin Van Oort Sample ID: M.M-MW-OW

Date: 5/22/12 Field Conditions: Cloudy, rain, wind, cool

Condition of Well: No outer casing

Depth to Water (DTW): 22.52 Total Depth of Well (TD): ~78 ft

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 36.23 Three Well Volumes: 108.69

Purge Equipment: Bailer x2 Pump Depth: — Start Time: 1627

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1625	Pre-Purge			7.58	0.664	8.29	13.8	0.49		Brownish
1629	1.5			7.72	0.657	8.15	8.8	3.02		
1647	11			7.59	0.661	8.30	-1.3	2.93		
1707	21			7.59	0.681	8.34	-14.5	2.54		
1724	31			7.53	0.684	8.36	-25.6	2.82		
1733	36			7.55	0.678	8.38	-34.0	2.66		
1742	41			7.53	0.692	8.34	-44.3	2.72		
1752	46			7.50	0.706	8.48	-53.7	2.81		
1801	51			7.48	0.713	8.36	-58.9	2.61		
1809	56			7.47	0.718	8.37	-67.5	2.76		
1813	61			7.44	0.704	8.39	-69.5	2.83		
1815	Post Sample			7.18	0.722	8.32	-93.1	0.47		Brownish

Sample Time: 1820 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals (Fe + Zn)	
~~250mL Plastic~~	~~H_2SO_4~~	~~Nitrate+Nitrite~~	

Total Volume Purged: 62 Final Depth to Water: — End Time: 1832

Notes:

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mr. M Landfill Sample Location: MW-9R

Personnel: Martin VanDort Sample ID: M-M-MW-9R

Date: 5/22/12 Field Conditions: Windy, cloudy, cool

Condition of Well: Fair

Depth to Water (DTW): 35.01 Total Depth of Well (TD): 50.55

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 2.53 Three Well Volumes: 7.60

Purge Equipment: Bailer Pump Depth: — Start Time: 1355

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1345	purge			7.00	1.016	8.30	-33.8	5.13		Down hole
1355										Start
1358	1			7.07	1.020	8.88	-13.2	6.01		
1424	4.5			7.17	1.020	8.46	-6.7	7.33		
1441	7.5									Dry (1st in bailer)
5/23/12										
842	Post sample			7.02	1.025	8.11	-26.1	5.22		Down hole

Sample Time: 5/23/12 820 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
~~250mL Plastic~~	~~HNO_3~~	~~Dissolved Metals~~	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 8 Final Depth to Water: — End Time: 842

Notes:

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: M-M Landfill Sample Location: MW-11

Personnel: Martin Van Oort Sample ID: M-M-MW-11

Date: 5/23/12 Field Conditions: Clear, light breeze, cool

Condition of Well: Good

Depth to Water (DTW): 24.32 Total Depth of Well (TD): 82.30

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 9.45 Three Well Volumes: 28.35

Purge Equipment: Bailer Pump Depth: — Start Time: 814

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
903	Pre Purge			7.44	0.637	8.52	-42.4	1.46		Downhole
918	1			7.59	0.649	8.73	-43.9	5.59		
955	11			7.49	0.639	8.56	-56.2	2.67		
1029	21			7.60	0.639	8.85	-61.5	2.23		
1050	26			7.50	0.639	8.94	-61.9	2.61		
1101	29			7.59	0.638	8.85	-62.0	2.70		
1129	Post Purge			7.59	0.637	8.56	-71.0	0.29		Downhole

Sample Time: 1110 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 29.5 Final Depth to Water: — End Time: 1130

Notes:

Sampler Signature: [signature]

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Master M Landfill Sample Location: MW-12

Personnel: Martin Van Dort Sample ID: M-M-MW-12

Date: 5/23/12 Field Conditions: Partly cloudy, windy, warm

Condition of Well: Good

Depth to Water (DTW): flowing Total Depth of Well (TD): ~126

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 17.28 Three Well Volumes: 51.83

Purge Equipment: bailer Pump Depth: — Start Time: 1310

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1305	Pre-purge			7.18	0.687	7.68	-69.6	0.46		~58 gal flowing down hole
1311	1			7.25	0.690	10.39	-69.9	2.28		59
1322	6			7.18	0.688	8.02	-68.2	2.42		64
1355	11			7.29	0.686	8.72	-69.6	2.69		
1406	16			7.26	0.687	8.37	-69.6	2.58		
1417	21			7.26	0.685	8.00	-70.1	2.77		
1446	Post Sample			7.26	0.687	7.87	-75.9	0.45		Down hole

Sample Time: 1430 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 22 Final Depth to Water: — End Time: 1446

Notes: Dup 1435 M-M-MW-12-Dup

Sampler Signature: [signature] Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-HW

Personnel: Marlin Van Oort Sample ID: M-M-MW-HW

Date: 5/23/12 Field Conditions: Partly cloudy, windy, warm

Condition of Well: Domestic

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed Pump Pump Depth: — Start Time: 1529

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1520	1			7.30	0.776	9.67	-51.5	8.70		
1533	10	~2		7.31	0.772	10.54	-51.4	3.31		
1535	15			7.32	0.770	10.09	-55.7	2.31		
1537	20	~3								
1539	25			7.33	0.772	10.27	-57.0	2.36		
1543	35	~10								
~~1545~~	~~105~~									
MVO 1550	~105			7.35	0.774	9.59	-62.8	1.52		
1553	~135			7.33	0.773	9.56	-62.1	1.54		
1555	~155			7.33	0.773	9.55	-61.6	1.63		

Sample Time: 1605 Sampling Method: frost free spigot behind house

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: ~160 Final Depth to Water: — End Time: 1610

Notes:

Sampler Signature: [signature]

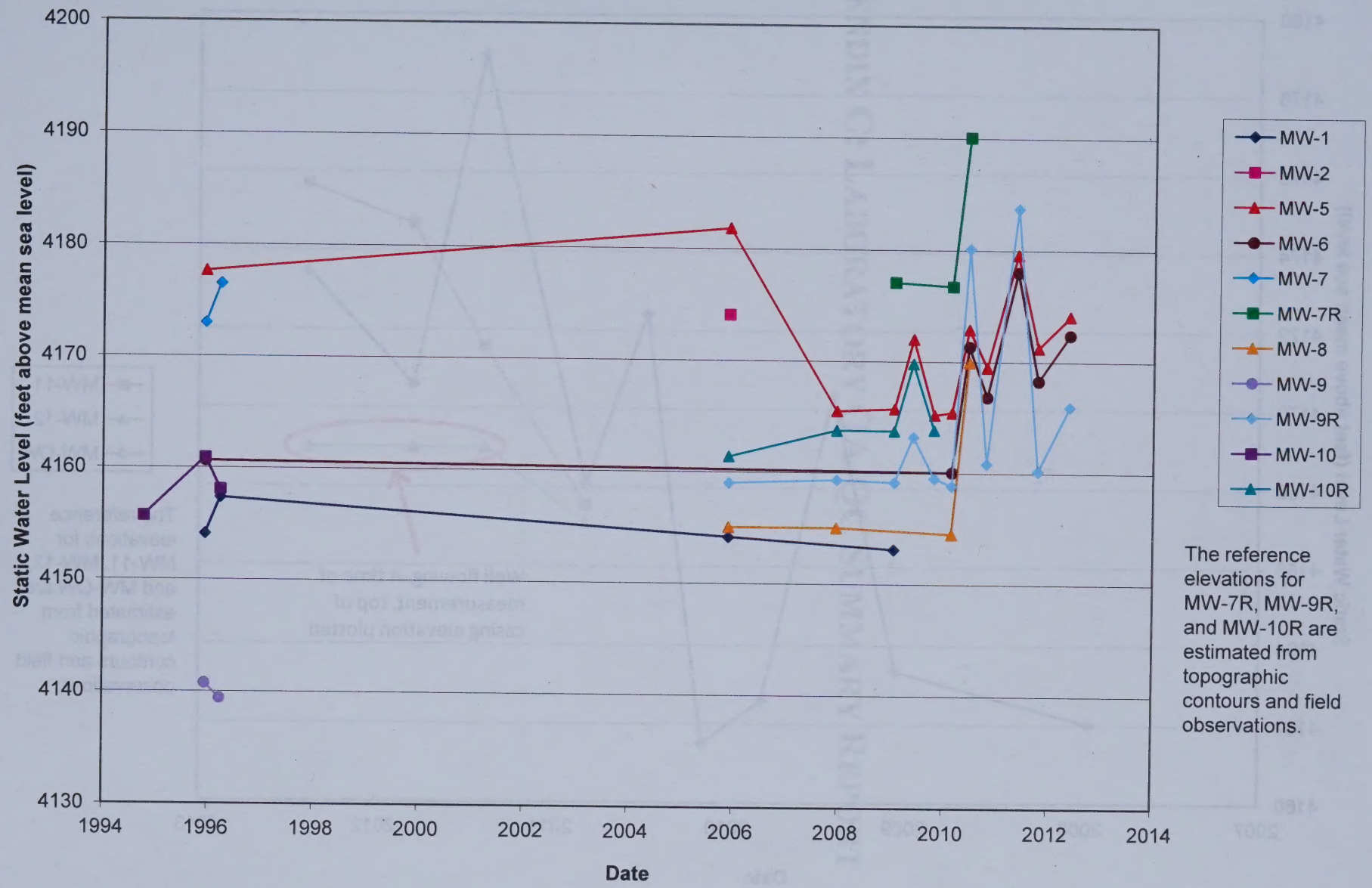
APPENDIX B: HISTORICAL GROUNDWATER LEVELS

Table B-1: Historical Water Levels

Date	MW-1	MW-2	MW-4	MW-5	MW-6	MW-7	MW-7R	MW-8	MW-9	MW-9R	MW-10	MW-10R	MW-11	MW-12	MW-OW
6/16/93	Dry	Dry	Dry	Dry	Dry	Dry		Dry							NM
10/14/94	NM	NM	NM	NM	NM	NM		NM	Dry		4155.69				NM
12/15/95	4154.12	Dry	Dry	4177.65	4160.64	4173.00		Dry	4140.77		4160.92				NM
3/28/96	4157.37	NM	NM	NM	NM	4176.51		NM	4139.43		4158.09				NM
11/29/05	4154.17	4174.1	NM	4181.82	Dry		Dry	4155.06		4159(1)		4161(1)			NM
12/18/07	Dry	Dry	Dry	4165.54	Dry		Dry	4155.04		4159(1)		4164(1)			4162(1)
1/21/09	4153.12	Dry	NM	4165.75(2)	?(3)		4177(1)(4)	NM		4159(1)		4164(1)			4163(1)
6/1/09	NM	NM	NM	4172.02	NM		NM	NM		4163(1)		4170(1)			4170(1)
10/26/09	NM	NM	NM	4165.23	NM		NM	NM		4160(1)		4164(1)			4163(1)
2/26/10	NM	NM	Dry	4165.44	4160.07		4177(1)	4154.52		4159(1)		NM(5)			4162(1)
6/21/10	NM	NM	NM	4172.91	4171.36		4190(1)	4169.97		4180(1)		NM(5)			4172(1)
10/25/10	NM	NM		4169.50	4166.84					4161(1)			4168(1)	4167(1)	4168(1)
5/23/11	NM	NM		4179.62	4178.04					4183(1)			4172(1)	Flowing(1)(6)	4179(1)
10/17/11	NM	NM		4171.25	4168.30					4160(1)			4175(1)	Flowing(1)(6)	4171(1)
5/22/12	NM	NM		4174.09	4172.42					4166(1)			4176(1)	Flowing(1)(6)	4173(1)

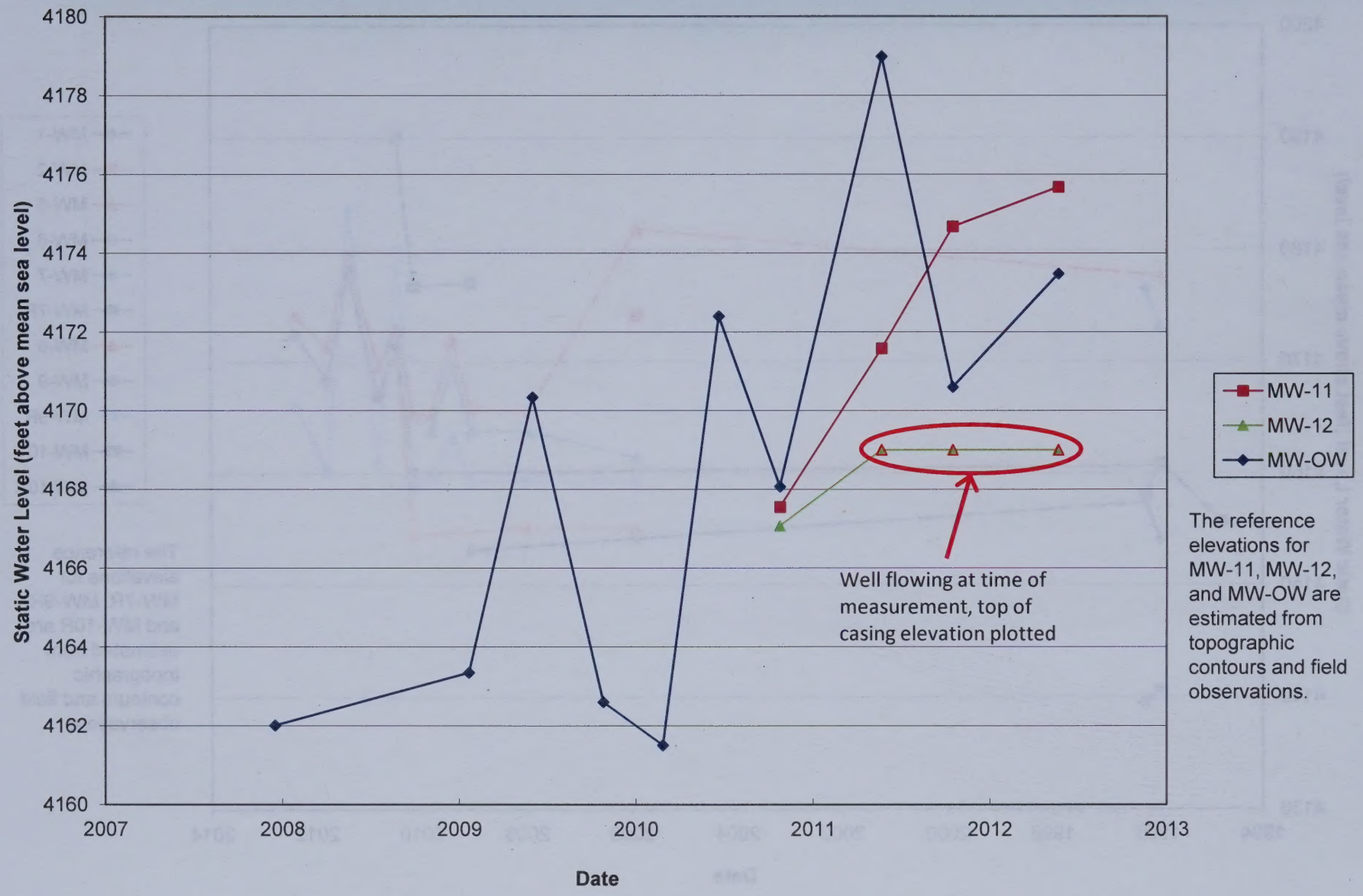
Notes:
NM = Not measured
[ ] = Well not present.
(1) Reference elevation estimated from topographic contours (5ft) and field observations
(2) Deeper than tape, 2 ft. of water in well, DTW calculated from TD recorded 12/18/07
(3) Deeper than tape, DTW unknown
(4) 3 in. of water in well, DTW calculated from TD
(5) Well damaged, measurement not possible.
(6) Well flowing artesian at time of measurement, top of casing elevation 4169ft

Figure B-1: Static Water Levels in Shallow Wells



The reference elevations for MW-7R, MW-9R, and MW-10R are estimated from topographic contours and field observations.

Figure B-2: Static Water Levels in Deep Wells



APPENDIX C: LABORATORY QA/QC SUMMARY REPORT

Workorder Receipt Checklist

MT-DEQ Solid Waste Section

H12050404

Login completed by: Tracy L. Lorash

Reviewed by: BL2000\kwiegand

Reviewed Date: 5/29/2012

Date Received: 5/24/2012

Received by: TLL

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Container/Temp Blank temperature:	4.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☑	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

Sample ID on all bottles includes MrM - COC does not. Per Martin, Please include the MrM in the sample ID's. One voa vial for MW-12-Dup has a bb size air bubble. TI 5/25/12.

ENERGY

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ Solid Waste	Mister M Landfill	State: MT	Yes ☒ No ☐
Report Mail Address:	**Contact Name:** / **Phone/Fax:**	**Email:**	**Sampler: (Please Print)**
1520 E. Sixth Ave, Helena, MT 59620	Martin Van Oort 444-2802	mvanoort@mt.gov	Martin Van Oort
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
Same	Same		9758

Special Report/Formats:

☐ DW
☐ POTW/WWTP
☐ State: _____
☐ Other: _____
☐ EDD/EDT (Electronic Data) Format: _____
☐ LEVEL IV
☐ NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids Vegetation Bioassay Other
DW - Drinking Water

ANALYSIS REQUESTED

SEE ATTACHED

Standard Turnaround (TAT)

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: Please use DEQ-7 required reporting limits

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	pH, Conductivity, Cl, SO_4^{2-}	8260 VOCs	Nitrate + Nitrite	Dissolved metals, full list	Fe & Zn								
1 MW-9W	5/22/12	1820	SW	X	X			X								
2 MW-9R	5/23/12	820	SW	X	X	X										
3 MW-11	5/23/12	1110	GW	X	X	X	X									
4 MW-12	5/23/12	1430	GW	X	X	X	X									
5 MW-12-Dup	5/23/12	1435	GW	X	X	X	X									
6 MW-HW	5/23/12	1605	GW	X	X	X	X									
7 Trip Blank	5/22/12	—	IW		X											
8																
9																
10																

Shipped by: Hand del
Cooler ID(s): Y
Receipt Temp: 4.6 °C
On Ice: Y N
Custody Seal: On Bottle Y N; On Cooler Y N
Intact Y N
Signature Match Y N

LABORATORY USE ONLY #1205040

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Martin Van Oort	5/24/12 1304				
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Tracy Lerol	Date/Time: 5/24/12 13:04	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-007
Client Sample ID TB 5-16-12 EM HCL0256 2558

Report Date: 06/11/12
Collection Date: 05/22/12 08:20
DateReceived: 05/24/12
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/12 20:21 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/12 20:21 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/12 20:21 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/12 20:21 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/12 20:21 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-007
Client Sample ID TB 5-16-12 EM HCL0256 2558

Report Date: 06/11/12
Collection Date: 05/22/12 08:20
DateReceived: 05/24/12
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/01/12 20:21 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	06/01/12 20:21 / abb
Surr: Dibromofluoromethane	79.0	%REC		70-130		SW8260B	06/01/12 20:21 / abb
Surr: p-Bromofluorobenzene	90.0	%REC		70-130		SW8260B	06/01/12 20:21 / abb
Surr: Toluene-d8	105	%REC		70-130		SW8260B	06/01/12 20:21 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B									Analytical Run: PHSC_101-H_120524A	
Sample ID: SC 2ND 1000		Initial Calibration Verification Standard								05/24/12 08:52
Conductivity @ 25 C		1010	umhos/cm	1.0	101	90	110			
Sample ID: CCV - SC 1413		Continuing Calibration Verification Standard								05/24/12 13:06
Conductivity @ 25 C		1440	umhos/cm	1.0	102	90	110			
Method: A2510 B										Batch: R80173
Sample ID: SC 150		Initial Calibration Verification Standard				Run: PHSC_101-H_120524A				05/24/12 08:44
Conductivity @ 25 C		147	umhos/cm	1.0	98	90	110			
Sample ID: SC 5000		Initial Calibration Verification Standard				Run: PHSC_101-H_120524A				05/24/12 08:47
Conductivity @ 25 C		5070	umhos/cm	1.0	101	90	110			
Sample ID: SC 20000		Initial Calibration Verification Standard				Run: PHSC_101-H_120524A				05/24/12 08:49
Conductivity @ 25 C		20200	umhos/cm	1.0	101	90	110			
Sample ID: H12050404-006ADUP		Sample Duplicate				Run: PHSC_101-H_120524A				05/24/12 15:08
Conductivity @ 25 C		800	umhos/cm	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B									Analytical Run: PHSC_101-H_120524A	
Sample ID: pH 7	Initial Calibration Verification Standard									05/24/12 08:42
pH		6.98	s.u.	0.10	100	98	102			
Sample ID: CCV - pH 7	Continuing Calibration Verification Standard									05/24/12 13:03
pH		7.00	s.u.	0.10	100	98	102			
Method: A4500-H B										Batch: R80173
Sample ID: H12050404-006ADUP	Sample Duplicate					Run: PHSC_101-H_120524A				05/24/12 15:08
pH		7.3	s.u.	0.10						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC102-H_120529A	
Sample ID: ICV052912-12	2	Initial Calibration Verification Standard							05/29/12 16:07	
Chloride		100	mg/L	1.0	103	90	110			
Sulfate		410	mg/L	1.0	102	90	110			
Sample ID: CCV052912-44	2	Continuing Calibration Verification Standard							05/29/12 22:51	
Chloride		100	mg/L	1.0	104	90	110			
Sulfate		410	mg/L	1.0	103	90	110			
Method: E300.0									Batch: R80301	
Sample ID: ICB052912-13	2	Method Blank				Run: IC102-H_120529A			05/29/12 16:20	
Chloride		ND	mg/L	0.03						
Sulfate		ND	mg/L	0.1						
Sample ID: LFB052912-14	2	Laboratory Fortified Blank				Run: IC102-H_120529A			05/29/12 16:33	
Chloride		50	mg/L	1.0	101	90	110			
Sulfate		200	mg/L	1.1	98	90	110			
Sample ID: H12050404-004AMS	2	Sample Matrix Spike				Run: IC102-H_120529A			05/30/12 00:19	
Chloride		58	mg/L	1.0	109	90	110			
Sulfate		250	mg/L	1.1	108	90	110			
Sample ID: H12050404-004AMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_120529A			05/30/12 00:31	
Chloride		58	mg/L	1.0	109	90	110	0.0	20	
Sulfate		250	mg/L	1.1	109	90	110	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA203-HE_120525A	
Sample ID: ICV		Initial Calibration Verification Standard							05/25/12 14:21	
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110			
Sample ID: ICB		Initial Calibration Blank, Instrument Blank							05/25/12 14:26	
Nitrogen, Nitrate+Nitrite as N		-0.00397	mg/L	0.010		0	0			
Sample ID: CCV		Continuing Calibration Verification Standard							05/25/12 15:04	
Nitrogen, Nitrate+Nitrite as N		0.488	mg/L	0.010	98	90	110			
Method: E353.2									Batch: R80247	
Sample ID: LFB		Laboratory Fortified Blank				Run: FIA203-HE_120525A			05/25/12 14:23	
Nitrogen, Nitrate+Nitrite as N		1.02	mg/L	0.010	102	90	110			
Sample ID: MBLK		Method Blank				Run: FIA203-HE_120525A			05/25/12 14:27	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.002						
Sample ID: LCS		Laboratory Control Sample				Run: FIA203-HE_120525A			05/25/12 14:29	
Nitrogen, Nitrate+Nitrite as N		6.60	mg/L	0.050	102	90	110			
Sample ID: H12050387-001CMS		Sample Matrix Spike				Run: FIA203-HE_120525A			05/25/12 15:07	
Nitrogen, Nitrate+Nitrite as N		1.25	mg/L	0.010	99	90	110			
Sample ID: H12050387-001CMSD		Sample Matrix Spike Duplicate				Run: FIA203-HE_120525A			05/25/12 15:08	
Nitrogen, Nitrate+Nitrite as N		1.28	mg/L	0.010	101	90	110	1.9	20	
Method: E353.2									Analytical Run: FIA203-HE_120605A	
Sample ID: ICV		Initial Calibration Verification Standard							06/05/12 14:03	
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110			
Sample ID: CCV		Continuing Calibration Verification Standard							06/05/12 14:05	
Nitrogen, Nitrate+Nitrite as N		0.497	mg/L	0.010	99	90	110			
Sample ID: ICB		Initial Calibration Blank, Instrument Blank							06/05/12 14:08	
Nitrogen, Nitrate+Nitrite as N		-0.00673	mg/L	0.010		0	0			
Method: E353.2									Batch: R80446	
Sample ID: LFB		Laboratory Fortified Blank				Run: FIA203-HE_120605A			06/05/12 14:04	
Nitrogen, Nitrate+Nitrite as N		0.964	mg/L	0.010	96	90	110			
Sample ID: MBLK		Method Blank				Run: FIA203-HE_120605A			06/05/12 14:09	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.002						
Sample ID: H12060022-001GMS		Sample Matrix Spike				Run: FIA203-HE_120605A			06/05/12 14:14	
Nitrogen, Nitrate+Nitrite as N		0.957	mg/L	0.010	96	90	110			
Sample ID: H12060022-001GMSD		Sample Matrix Spike Duplicate				Run: FIA203-HE_120605A			06/05/12 14:15	
Nitrogen, Nitrate+Nitrite as N		0.963	mg/L	0.010	96	90	110	0.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS204-B_120530B	
Sample ID: ICV STD	16	Initial Calibration Verification Standard							05/30/12 12:00	
Antimony		0.0492	mg/L	0.0010	98	90	110			
Arsenic		0.0510	mg/L	0.0010	102	90	110			
Barium		0.0497	mg/L	0.0010	99	90	110			
Beryllium		0.0250	mg/L	0.0010	100	90	110			
Cadmium		0.0261	mg/L	0.0010	104	90	110			
Chromium		0.0518	mg/L	0.0010	104	90	110			
Cobalt		0.0509	mg/L	0.0010	102	90	110			
Copper		0.0523	mg/L	0.0010	105	90	110			
Iron		0.262	mg/L	0.0010	105	90	110			
Lead		0.0498	mg/L	0.0010	100	90	110			
Nickel		0.0520	mg/L	0.0010	104	90	110			
Selenium		0.0500	mg/L	0.0010	100	90	110			
Silver		0.0242	mg/L	0.0010	97	90	110			
Thallium		0.0503	mg/L	0.0010	101	90	110			
Vanadium		0.0510	mg/L	0.0010	102	90	110			
Zinc		0.0533	mg/L	0.0010	107	90	110			
Method: SW6020									Batch: R80332	
Sample ID: ICB	16	Method Blank				Run: ICPMS204-B_120530B			05/30/12 15:16	
Antimony		ND	mg/L	7E-06						
Arsenic		ND	mg/L	3E-05						
Barium		ND	mg/L	3E-05						
Beryllium		ND	mg/L	2E-05						
Cadmium		ND	mg/L	1E-05						
Chromium		ND	mg/L	6E-05						
Cobalt		ND	mg/L	9E-06						
Copper		ND	mg/L	3E-05						
Iron		0.0006	mg/L	0.0002						
Lead		ND	mg/L	1.0E-05						
Nickel		0.0006	mg/L	5E-05						
Selenium		5E-05	mg/L	4E-05						
Silver		ND	mg/L	3E-05						
Thallium		ND	mg/L	7E-06						
Vanadium		2E-05	mg/L	1E-05						
Zinc		0.0007	mg/L	0.0003						
Sample ID: LFB	16	Laboratory Fortified Blank				Run: ICPMS204-B_120530B			05/30/12 15:21	
Antimony		0.0487	mg/L	0.0010	97	80	120			
Arsenic		0.0485	mg/L	0.0010	97	80	120			
Barium		0.0485	mg/L	0.0010	97	80	120			
Beryllium		0.0483	mg/L	0.0010	97	80	120			
Cadmium		0.0472	mg/L	0.0010	94	80	120			
Chromium		0.0477	mg/L	0.0010	95	80	120			
Cobalt		0.0475	mg/L	0.0010	95	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R80332
Sample ID: LFB	16	Laboratory Fortified Blank				Run: ICPMS204-B_120530B				05/30/12 15:21
Copper		0.0471	mg/L	0.0010	94	80	120			
Iron		4.73	mg/L	0.0010	95	80	120			
Lead		0.0484	mg/L	0.0010	97	80	120			
Nickel		0.0477	mg/L	0.0010	94	80	120			
Selenium		0.0481	mg/L	0.0010	96	80	120			
Silver		0.0198	mg/L	0.0010	99	80	120			
Thallium		0.0479	mg/L	0.0010	96	80	120			
Vanadium		0.0480	mg/L	0.0010	96	80	120			
Zinc		0.0488	mg/L	0.0010	96	80	120			
Sample ID: H12050404-001BMS	16	Sample Matrix Spike				Run: ICPMS204-B_120530B				05/30/12 19:50
Antimony		0.0490	mg/L	0.0010	98	75	125			
Arsenic		0.0533	mg/L	0.0010	102	75	125			
Barium		0.112	mg/L	0.050	93	75	125			
Beryllium		0.0486	mg/L	0.0010	97	75	125			
Cadmium		0.0463	mg/L	0.0010	93	75	125			
Chromium		0.0497	mg/L	0.0050	99	75	125			
Cobalt		0.0499	mg/L	0.0050	92	75	125			
Copper		0.0477	mg/L	0.0050	95	75	125			
Iron		6.39	mg/L	0.030	95	75	125			
Lead		0.0495	mg/L	0.0010	99	75	125			
Nickel		0.0602	mg/L	0.0050	93	75	125			
Selenium		0.0538	mg/L	0.0010	107	75	125			
Silver		0.0184	mg/L	0.0010	92	75	125			
Thallium		0.0490	mg/L	0.00050	98	75	125			
Vanadium		0.0497	mg/L	0.010	99	75	125			
Zinc		0.894	mg/L	0.010		75	125			A
Sample ID: H12050404-001BMSD	16	Sample Matrix Spike Duplicate				Run: ICPMS204-B_120530B				05/30/12 19:54
Antimony		0.0485	mg/L	0.0010	97	75	125	1.1	20	
Arsenic		0.0531	mg/L	0.0010	101	75	125	0.5	20	
Barium		0.112	mg/L	0.050	92	75	125	0.4	20	
Beryllium		0.0482	mg/L	0.0010	96	75	125	0.8	20	
Cadmium		0.0458	mg/L	0.0010	92	75	125	1.1	20	
Chromium		0.0488	mg/L	0.0050	98	75	125	1.9	20	
Cobalt		0.0492	mg/L	0.0050	91	75	125	1.3	20	
Copper		0.0475	mg/L	0.0050	95	75	125	0.3	20	
Iron		6.43	mg/L	0.030	96	75	125	0.6	20	
Lead		0.0491	mg/L	0.0010	98	75	125	0.9	20	
Nickel		0.0596	mg/L	0.0050	92	75	125	1.0	20	
Selenium		0.0542	mg/L	0.0010	108	75	125	0.7	20	
Silver		0.0186	mg/L	0.0010	93	75	125	0.6	20	
Thallium		0.0485	mg/L	0.00050	97	75	125	1.1	20	
Vanadium		0.0495	mg/L	0.010	99	75	125	0.3	20	
Zinc		0.891	mg/L	0.010		75	125	0.4	20	A

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R80332
Sample ID: H12050404-001BMSD	16	Sample Matrix Spike Duplicate				Run: ICPMS204-B_120530B				05/30/12 19:54

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R80375
Sample ID: CCV060112B	54	Continuing Calibration Verification Standard								06/01/12 17:56
Acetone		40.8	ug/L	20	82	70	130			
Acrylonitrile		53.2	ug/L	20	106	70	130			
Benzene		4.04	ug/L	1.0	81	70	130			
Bromochloromethane		4.52	ug/L	1.0	90	70	130			
Bromodichloromethane		5.44	ug/L	1.0	109	70	130			
Bromoform		4.80	ug/L	1.0	96	70	130			
Bromomethane		4.96	ug/L	1.0	99	70	130			
Carbon disulfide		5.68	ug/L	1.0	114	70	130			
Carbon tetrachloride		4.60	ug/L	1.0	92	70	130			
Chlorobenzene		4.76	ug/L	1.0	95	70	130			
Chlorodibromomethane		4.88	ug/L	1.0	98	70	130			
Chloroethane		6.44	ug/L	1.0	129	70	130			
Chloroform		4.52	ug/L	1.0	90	80	120			
Chloromethane		4.72	ug/L	1.0	94	70	130			
1,2-Dibromo-3-chloropropane		4.40	ug/L	1.0	88	70	130			
1,2-Dibromoethane		4.92	ug/L	1.0	98	70	130			
Dibromomethane		4.96	ug/L	1.0	99	70	130			
1,2-Dichlorobenzene		4.88	ug/L	1.0	98	70	130			
1,4-Dichlorobenzene		5.16	ug/L	1.0	103	70	130			
trans-1,4-Dichloro-2-butene		4.72	ug/L	1.0	94	70	130			
Dichlorodifluoromethane		5.48	ug/L	1.0	110	70	130			
1,1-Dichloroethane		4.68	ug/L	1.0	94	70	130			
1,2-Dichloroethane		4.72	ug/L	1.0	94	70	130			
1,1-Dichloroethene		5.96	ug/L	1.0	119	80	120			
cis-1,2-Dichloroethene		5.12	ug/L	1.0	102	70	130			
trans-1,2-Dichloroethene		5.36	ug/L	1.0	107	70	130			
1,2-Dichloropropane		5.76	ug/L	1.0	115	80	120			
cis-1,3-Dichloropropene		5.08	ug/L	1.0	102	70	130			
trans-1,3-Dichloropropene		5.16	ug/L	1.0	103	70	130			
Ethylbenzene		5.00	ug/L	1.0	100	80	120			
2-Hexanone		45.6	ug/L	20	91	70	130			
Iodomethane		5.68	ug/L	1.0	114	70	130			
Methyl ethyl ketone		49.2	ug/L	20	98	70	130			
Methyl isobutyl ketone		46.8	ug/L	20	94	70	130			
Methylene chloride		5.44	ug/L	1.0	109	70	130			
Styrene		4.76	ug/L	1.0	95	70	130			
1,1,1,2-Tetrachloroethane		4.52	ug/L	1.0	90	70	130			
1,1,2,2-Tetrachloroethane		4.40	ug/L	1.0	88	70	130			
Tetrachloroethene		5.28	ug/L	1.0	106	70	130			
Toluene		5.24	ug/L	1.0	105	80	120			
1,1,1-Trichloroethane		4.36	ug/L	1.0	87	70	130			
1,1,2-Trichloroethane		4.92	ug/L	1.0	98	70	130			
Trichloroethene		5.48	ug/L	1.0	110	70	130			
Trichlorofluoromethane		5.96	ug/L	1.0	119	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R80375
Sample ID: CCV060112B	54	Continuing Calibration Verification Standard								06/01/12 17:56
1,2,3-Trichloropropane		4.44	ug/L	1.0	89	70	130			
Vinyl acetate		5.32	ug/L	1.0	106	70	130			
Vinyl chloride		5.60	ug/L	1.0	112	80	120			
m+p-Xylenes		9.68	ug/L	1.0	97	70	130			
o-Xylene		4.84	ug/L	1.0	97	70	130			
Xylenes, Total		14.5	ug/L	1.0	97	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	102	70	130			
Surr: Dibromofluoromethane				1.0	76	70	130			
Surr: p-Bromofluorobenzene				1.0	86	70	130			
Surr: Toluene-d8				1.0	107	70	130			
Method: SW8260B										Batch: R80375
Sample ID: LCS060112A	54	Laboratory Control Sample				Run: 1SATURN_120601A				06/01/12 18:38
Acetone		50.8	ug/L	20	102	70	130			
Acrylonitrile		55.2	ug/L	20	110	70	130			
Benzene		4.76	ug/L	1.0	95	70	130			
Bromochloromethane		3.50	ug/L	1.0	70	70	130			
Bromodichloromethane		5.60	ug/L	1.0	112	70	130			
Bromoform		5.00	ug/L	1.0	100	70	130			
Bromomethane		3.68	ug/L	1.0	74	70	130			
Carbon disulfide		6.08	ug/L	1.0	122	70	130			
Carbon tetrachloride		5.08	ug/L	1.0	102	70	130			
Chlorobenzene		5.12	ug/L	1.0	102	70	130			
Chlorodibromomethane		5.04	ug/L	1.0	101	70	130			
Chloroethane		6.28	ug/L	1.0	126	70	130			
Chloroform		4.84	ug/L	1.0	97	70	130			
Chloromethane		5.12	ug/L	1.0	102	70	130			
1,2-Dibromo-3-chloropropane		4.80	ug/L	1.0	96	70	130			
1,2-Dibromoethane		5.20	ug/L	1.0	104	70	130			
Dibromomethane		5.20	ug/L	1.0	104	70	130			
1,2-Dichlorobenzene		5.12	ug/L	1.0	102	70	130			
1,4-Dichlorobenzene		5.20	ug/L	1.0	104	70	130			
trans-1,4-Dichloro-2-butene		5.20	ug/L	1.0	104	70	130			
Dichlorodifluoromethane		5.52	ug/L	1.0	110	70	130			
1,1-Dichloroethane		5.00	ug/L	1.0	100	70	130			
1,2-Dichloroethane		5.40	ug/L	1.0	108	70	130			
1,1-Dichloroethene		6.32	ug/L	1.0	126	70	130			
cis-1,2-Dichloroethene		5.52	ug/L	1.0	110	70	130			
trans-1,2-Dichloroethene		6.00	ug/L	1.0	120	70	130			
1,2-Dichloropropane		6.16	ug/L	1.0	123	70	130			
cis-1,3-Dichloropropene		5.72	ug/L	1.0	114	70	130			
trans-1,3-Dichloropropene		5.44	ug/L	1.0	109	70	130			
Ethylbenzene		5.28	ug/L	1.0	106	70	130			
2-Hexanone		50.4	ug/L	20	101	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80375
Sample ID: LCS060112A	54	Laboratory Control Sample				Run: 1SATURN_120601A				06/01/12 18:38
Iodomethane		4.36	ug/L	1.0	87	70	130			
Methyl ethyl ketone		53.2	ug/L	20	106	70	130			
Methyl isobutyl ketone		52.4	ug/L	20	105	70	130			
Methylene chloride		6.28	ug/L	1.0	126	70	130			
Styrene		5.20	ug/L	1.0	104	70	130			
1,1,1,2-Tetrachloroethane		4.92	ug/L	1.0	98	70	130			
1,1,2,2-Tetrachloroethane		4.96	ug/L	1.0	99	70	130			
Tetrachloroethene		5.72	ug/L	1.0	114	70	130			
Toluene		5.72	ug/L	1.0	114	70	130			
1,1,1-Trichloroethane		4.72	ug/L	1.0	94	70	130			
1,1,2-Trichloroethane		5.00	ug/L	1.0	100	70	130			
Trichloroethene		5.68	ug/L	1.0	114	70	130			
Trichlorofluoromethane		6.04	ug/L	1.0	121	70	130			
1,2,3-Trichloropropane		4.32	ug/L	1.0	86	70	130			
Vinyl acetate		6.24	ug/L	1.0	125	70	130			
Vinyl chloride		5.72	ug/L	1.0	114	70	130			
m+p-Xylenes		10.6	ug/L	1.0	106	70	130			
o-Xylene		5.32	ug/L	1.0	106	70	130			
Xylenes, Total		15.9	ug/L	1.0	106	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	98	70	130			
Surr: Dibromofluoromethane				1.0	79	70	130			
Surr: p-Bromofluorobenzene				1.0	89	70	130			
Surr: Toluene-d8				1.0	116	70	130			
Sample ID: MB060112A	54	Method Blank				Run: 1SATURN_120601A				06/01/12 19:50
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80375
Sample ID: MB060112A	54	Method Blank				Run: 1SATURN_120601A				06/01/12 19:50
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	99	70	130			
Surr: Dibromofluoromethane				1.0	80	70	130			
Surr: p-Bromofluorobenzene				1.0	88	70	130			
Surr: Toluene-d8				1.0	114	70	130			
Sample ID: H12050404-001CMS	54	Sample Matrix Spike				Run: 1SATURN_120601A				06/02/12 10:56
Acetone		74.2	ug/L	40	74	70	130			
Acrylonitrile		102	ug/L	40	102	70	130			
Benzene		9.84	ug/L	2.0	98	70	130			
Bromochloromethane		9.12	ug/L	2.0	91	70	130			
Bromodichloromethane		11.0	ug/L	2.0	110	70	130			
Bromoform		9.28	ug/L	2.0	93	70	130			
Bromomethane		10.1	ug/L	2.0	101	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80375
Sample ID: H12050404-001CMS	54	Sample Matrix Spike				Run: 1SATURN_120601A				06/02/12 10:56
Carbon disulfide		12.6	ug/L	2.0	126	70	130			
Carbon tetrachloride		9.60	ug/L	2.0	96	70	130			
Chlorobenzene		9.92	ug/L	2.0	99	70	130			
Chlorodibromomethane		9.68	ug/L	2.0	97	70	130			
Chloroethane		12.3	ug/L	2.0	123	70	130			
Chloroform		8.96	ug/L	2.0	90	70	130			
Chloromethane		9.76	ug/L	2.0	98	70	130			
1,2-Dibromo-3-chloropropane		8.72	ug/L	2.0	87	70	130			
1,2-Dibromoethane		9.36	ug/L	2.0	94	70	130			
Dibromomethane		10.0	ug/L	2.0	100	70	130			
1,2-Dichlorobenzene		10.6	ug/L	2.0	106	70	130			
1,4-Dichlorobenzene		10.4	ug/L	2.0	104	70	130			
trans-1,4-Dichloro-2-butene		10.0	ug/L	2.0	100	70	130			
Dichlorodifluoromethane		10.0	ug/L	2.0	100	70	130			
1,1-Dichloroethane		9.68	ug/L	2.0	97	70	130			
1,2-Dichloroethane		10.2	ug/L	2.0	102	70	130			
1,1-Dichloroethene		11.8	ug/L	2.0	118	70	130			
cis-1,2-Dichloroethene		18.2	ug/L	2.0	93	70	130			
trans-1,2-Dichloroethene		11.1	ug/L	2.0	111	70	130			
1,2-Dichloropropane		12.9	ug/L	2.0	129	70	130			
cis-1,3-Dichloropropene		11.0	ug/L	2.0	110	70	130			
trans-1,3-Dichloropropene		10.7	ug/L	2.0	107	70	130			
Ethylbenzene		10.5	ug/L	2.0	105	70	130			
2-Hexanone		87.2	ug/L	40	87	70	130			
Iodomethane		9.12	ug/L	2.0	91	70	130			
Methyl ethyl ketone		103	ug/L	40	103	70	130			
Methyl isobutyl ketone		95.2	ug/L	40	95	70	130			
Methylene chloride		11.9	ug/L	2.0	119	70	130			
Styrene		9.36	ug/L	2.0	94	70	130			
1,1,1,2-Tetrachloroethane		8.40	ug/L	2.0	84	70	130			
1,1,2,2-Tetrachloroethane		9.52	ug/L	2.0	95	70	130			
Tetrachloroethene		11.1	ug/L	2.0	111	70	130			
Toluene		10.6	ug/L	2.0	106	70	130			
1,1,1-Trichloroethane		8.96	ug/L	2.0	90	70	130			
1,1,2-Trichloroethane		10.3	ug/L	2.0	103	70	130			
Trichloroethene		11.4	ug/L	2.0	114	70	130			
Trichlorofluoromethane		10.7	ug/L	2.0	107	70	130			
1,2,3-Trichloropropane		10.1	ug/L	2.0	101	70	130			
Vinyl acetate		12.1	ug/L	2.0	121	70	130			
Vinyl chloride		10.6	ug/L	2.0	104	70	130			
m+p-Xylenes		19.9	ug/L	2.0	100	70	130			
o-Xylene		9.44	ug/L	2.0	94	70	130			
Xylenes, Total		29.4	ug/L	2.0	98	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	102	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80375
Sample ID: H12050404-001CMS	54	Sample Matrix Spike				Run: 1SATURN_120601A				06/02/12 10:56
Surr: Dibromofluoromethane				2.0	95	70	130			
Surr: p-Bromofluorobenzene				2.0	96	70	130			
Surr: Toluene-d8				2.0	114	70	130			
Sample ID: H12050404-001CMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_120601A				06/02/12 11:26
Acetone		80.8	ug/L	40	81	70	130	8.5	20	
Acrylonitrile		101	ug/L	40	101	70	130	0.8	20	
Benzene		9.76	ug/L	2.0	98	70	130	0.8	20	
Bromochloromethane		9.60	ug/L	2.0	96	70	130	5.1	20	
Bromodichloromethane		10.9	ug/L	2.0	109	70	130	1.5	20	
Bromoform		10.6	ug/L	2.0	106	70	130	13	20	
Bromomethane		9.28	ug/L	2.0	93	70	130	8.3	20	
Carbon disulfide		14.2	ug/L	2.0	142	70	130	12	20	S
Carbon tetrachloride		9.28	ug/L	2.0	93	70	130	3.4	20	
Chlorobenzene		10.2	ug/L	2.0	102	70	130	3.2	20	
Chlorodibromomethane		9.36	ug/L	2.0	94	70	130	3.4	20	
Chloroethane		11.4	ug/L	2.0	114	70	130	8.1	20	
Chloroform		9.28	ug/L	2.0	93	70	130	3.5	20	
Chloromethane		9.12	ug/L	2.0	91	70	130	6.8	20	
1,2-Dibromo-3-chloropropane		8.56	ug/L	2.0	86	70	130	1.9	20	
1,2-Dibromoethane		10.2	ug/L	2.0	102	70	130	9.0	20	
Dibromomethane		10.1	ug/L	2.0	101	70	130	0.8	20	
1,2-Dichlorobenzene		10.1	ug/L	2.0	101	70	130	5.4	20	
1,4-Dichlorobenzene		10.6	ug/L	2.0	106	70	130	2.3	20	
trans-1,4-Dichloro-2-butene		9.84	ug/L	2.0	98	70	130	1.6	20	
Dichlorodifluoromethane		10.2	ug/L	2.0	102	70	130	2.4	20	
1,1-Dichloroethane		9.68	ug/L	2.0	97	70	130	0.0	20	
1,2-Dichloroethane		9.60	ug/L	2.0	96	70	130	6.5	20	
1,1-Dichloroethene		12.1	ug/L	2.0	121	70	130	2.0	20	
cis-1,2-Dichloroethene		17.0	ug/L	2.0	80	70	130	7.3	20	
trans-1,2-Dichloroethene		10.9	ug/L	2.0	109	70	130	2.2	20	
1,2-Dichloropropane		12.5	ug/L	2.0	125	70	130	3.2	20	
cis-1,3-Dichloropropene		11.4	ug/L	2.0	114	70	130	3.6	20	
trans-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130	4.6	20	
Ethylbenzene		10.6	ug/L	2.0	106	70	130	1.5	20	
2-Hexanone		97.6	ug/L	40	98	70	130	11	20	
Iodomethane		9.68	ug/L	2.0	97	70	130	6.0	20	
Methyl ethyl ketone		102	ug/L	40	102	70	130	0.8	20	
Methyl isobutyl ketone		107	ug/L	40	107	70	130	12	20	
Methylene chloride		11.8	ug/L	2.0	118	70	130	1.4	20	
Styrene		9.76	ug/L	2.0	98	70	130	4.2	20	
1,1,1,2-Tetrachloroethane		9.20	ug/L	2.0	92	70	130	9.1	20	
1,1,2,2-Tetrachloroethane		9.68	ug/L	2.0	97	70	130	1.7	20	
Tetrachloroethene		10.5	ug/L	2.0	105	70	130	5.9	20	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 06/11/12
Work Order: H12050404

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80375
Sample ID: H12050404-001CMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_120601A				06/02/12 11:26
Toluene		10.9	ug/L	2.0	109	70	130	3.0	20	
1,1,1-Trichloroethane		8.96	ug/L	2.0	90	70	130	0.0	20	
1,1,2-Trichloroethane		10.2	ug/L	2.0	102	70	130	0.8	20	
Trichloroethene		11.0	ug/L	2.0	110	70	130	3.6	20	
Trichlorofluoromethane		11.2	ug/L	2.0	112	70	130	4.4	20	
1,2,3-Trichloropropane		10.2	ug/L	2.0	102	70	130	1.6	20	
Vinyl acetate		12.3	ug/L	2.0	123	70	130	2.0	20	
Vinyl chloride		10.7	ug/L	2.0	105	70	130	0.7	20	
m+p-Xylenes		19.9	ug/L	2.0	100	70	130	0.0	20	
o-Xylene		10.2	ug/L	2.0	102	70	130	8.1	20	
Xylenes, Total		30.2	ug/L	2.0	101	70	130	2.7	20	
Surr: 1,2-Dichloroethane-d4				2.0	100	70	130	0.0	20	
Surr: Dibromofluoromethane				2.0	85	70	130	0.0	20	
Surr: p-Bromofluorobenzene				2.0	95	70	130	0.0	20	
Surr: Toluene-d8				2.0	114	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

APPENDIX D: LABORATORY ANALYTICAL REPORT

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Division

Project: Motor M Landfill

Report Date: 05/11/09

Work Order: H1205040A

Analyte	Qual	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPD Limit	Qual
Method:										
Sample ID: H1205040A01MS0		54 Sample Water Spike Duplicate				Run: [illegible]				[illegible]
Toluene		19.9	ug/L	2.0	100	70	130	3.4	20	
1,1,2-Trichloroethane		9.56	ug/L	2.0	96	70	130	2.0	20	
1,1,2,2-Tetrachloroethane		19.9	ug/L	2.0	100	70	130	0.3	20	
Tetrachloroethene		21.0	ug/L	2.0	105	70	130	5.8	20	
1,2-Dichlorobenzene		21.2	ug/L	2.0	106	70	130	4.3	20	
1,2,3-Trichlorobenzene		19.2	ug/L	2.0	96	70	130	1.6	20	
Vinyl acetate		20.0	ug/L	2.0	100	70	130	5.0	20	
Vinyl chloride		19.7	ug/L	2.0	98	70	130	0.2	20	
Xylene, Total		19.9	ug/L	2.0	100	70	130	3.5	20	
m,p-Xylene		19.2	ug/L	2.0	96	70	130	3.1	20	
o-Xylene		20.4	ug/L	2.0	102	70	130	3.7	20	
Surr: 1,2,3-Trichlorobenzene				2.0	110	70	130	0.0	20	
Surr: 1,2-Dichlorobenzene-d4				2.0	110	70	130	0.0	20	
Surr: 4-Bromofluorobenzene				2.0	100	70	130	0.0	20	
Surr: Toluene-d8				2.0	100	70	130	0.0	20	

Qualifiers:

RL - Reporting Limit

ND - Not detected at the reporting limit

ANALYTICAL SUMMARY REPORT

June 11, 2012

MT-DEQ Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12050404

Project Name: Mister M Landfill

Energy Laboratories Inc Helena MT received the following 7 samples for MT-DEQ Solid Waste Section on 5/24/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12050404-001	MrM-MW-DW	05/22/12 18:20	05/24/12	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H12050404-002	MrM-MW-9R	05/23/12 8:20	05/24/12	Aqueous	Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H12050404-003	MrM-MW-11	05/23/12 11:10	05/24/12	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H12050404-004	MrM-MW-12	05/23/12 14:30	05/24/12	Aqueous	Same As Above
H12050404-005	MrM-MW-12 Dup	05/23/12 14:35	05/24/12	Aqueous	Same As Above
H12050404-006	MrM-MW-HW	05/23/12 16:05	05/24/12	Aqueous	Same As Above
H12050404-007	TB 5-16-12 EM HCL0256 2558	05/22/12 8:20	05/24/12	Trip Blank	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By: Wanda Johnson
Login Supervisor

Digitally signed by Wanda Johnson
Date: 2012.06.13 09:28:12 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-001
Client Sample ID MrM-MW-DW

Report Date: 06/11/12
Collection Date: 05/22/12 18:20
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.10		A4500-H B	05/24/12 14:53 / cmm
Conductivity @ 25 C	740	umhos/cm		1.0		A2510 B	05/24/12 14:53 / cmm
INORGANICS							
Chloride	12	mg/L		1		E300.0	05/29/12 23:28 / zeg
Sulfate	32	mg/L		1		E300.0	05/29/12 23:28 / zeg
METALS, DISSOLVED							
Iron	1.62	mg/L		0.03		SW6020	05/30/12 19:45 / dck
Zinc	0.90	mg/L		0.01		SW6020	05/30/12 19:45 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/12 20:51 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/12 20:51 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
cis-1,2-Dichloroethene	8.9	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/12 20:51 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-001
Client Sample ID MrM-MW-DW

Report Date: 06/11/12
Collection Date: 05/22/12 18:20
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Iodomethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/12 20:51 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/12 20:51 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Vinyl chloride	0.22	ug/L	J	1.0		SW8260B	06/01/12 20:51 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/01/12 20:51 / abb
Surr: 1,2-Dichloroethane-d4	105	%REC		70-130		SW8260B	06/01/12 20:51 / abb
Surr: Dibromofluoromethane	79.0	%REC		70-130		SW8260B	06/01/12 20:51 / abb
Surr: p-Bromofluorobenzene	92.0	%REC		70-130		SW8260B	06/01/12 20:51 / abb
Surr: Toluene-d8	108	%REC		70-130		SW8260B	06/01/12 20:51 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-002
Client Sample ID MrM-MW-9R

Report Date: 06/11/12
Collection Date: 05/23/12 08:20
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.		0.10		A4500-H B	05/24/12 14:56 / cmm
Conductivity @ 25 C	1000	umhos/cm		1.0		A2510 B	05/24/12 14:56 / cmm
INORGANICS							
Chloride	30	mg/L		1		E300.0	05/29/12 23:41 / zeg
Sulfate	55	mg/L	D	2		E300.0	05/29/12 23:41 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	2.49	mg/L	D	0.02		E353.2	06/05/12 14:10 / jaw
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/12 21:21 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/12 21:21 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Carbon disulfide	0.59	ug/L	J	1.0		SW8260B	06/01/12 21:21 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,1-Dichloroethane	0.44	ug/L	J	1.0		SW8260B	06/01/12 21:21 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
cis-1,2-Dichloroethene	11	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/12 21:21 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than th reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-002
Client Sample ID MrM-MW-9R

Report Date: 06/11/12
Collection Date: 05/23/12 08:20
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/12 21:21 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/12 21:21 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Tetrachloroethene	0.63	ug/L	J	1.0		SW8260B	06/01/12 21:21 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Trichloroethene	0.46	ug/L	J	1.0		SW8260B	06/01/12 21:21 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/01/12 21:21 / abb
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	06/01/12 21:21 / abb
Surr: Dibromofluoromethane	83.0	%REC		70-130		SW8260B	06/01/12 21:21 / abb
Surr: p-Bromofluorobenzene	87.0	%REC		70-130		SW8260B	06/01/12 21:21 / abb
Surr: Toluene-d8	112	%REC		70-130		SW8260B	06/01/12 21:21 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-003
Client Sample ID MrM-MW-11

Report Date: 06/11/12
Collection Date: 05/23/12 11:10
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.10		A4500-H B	05/24/12 14:58 / cmm
Conductivity @ 25 C	650	umhos/cm		1.0		A2510 B	05/24/12 14:58 / cmm
INORGANICS							
Chloride	3	mg/L		1		E300.0	05/29/12 23:54 / zeg
Sulfate	41	mg/L		1		E300.0	05/29/12 23:54 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	05/25/12 15:13 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		SW6020	05/30/12 20:04 / dck
Arsenic	ND	mg/L		0.005		SW6020	05/30/12 20:04 / dck
Barium	ND	mg/L		0.1		SW6020	05/30/12 20:04 / dck
Beryllium	ND	mg/L		0.001		SW6020	05/30/12 20:04 / dck
Cadmium	ND	mg/L		0.001		SW6020	05/30/12 20:04 / dck
Chromium	ND	mg/L		0.01		SW6020	05/30/12 20:04 / dck
Cobalt	ND	mg/L		0.01		SW6020	05/30/12 20:04 / dck
Copper	ND	mg/L		0.01		SW6020	05/30/12 20:04 / dck
Iron	0.22	mg/L		0.03		SW6020	05/30/12 20:04 / dck
Lead	ND	mg/L		0.01		SW6020	05/30/12 20:04 / dck
Nickel	ND	mg/L		0.01		SW6020	05/30/12 20:04 / dck
Selenium	ND	mg/L		0.005		SW6020	05/30/12 20:04 / dck
Silver	ND	mg/L		0.005		SW6020	05/30/12 20:04 / dck
Thallium	ND	mg/L		0.005		SW6020	05/30/12 20:04 / dck
Vanadium	ND	mg/L		0.1		SW6020	05/30/12 20:04 / dck
Zinc	ND	mg/L		0.01		SW6020	05/30/12 20:04 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/12 21:52 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/12 21:52 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Carbon disulfide	0.26	ug/L	J	1.0		SW8260B	06/01/12 21:52 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-003
Client Sample ID MrM-MW-11

Report Date: 06/11/12
Collection Date: 05/23/12 11:10
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/12 21:52 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/12 21:52 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/12 21:52 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/01/12 21:52 / abb
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	06/01/12 21:52 / abb
Surr: Dibromofluoromethane	84.0	%REC		70-130		SW8260B	06/01/12 21:52 / abb
Surr: p-Bromofluorobenzene	92.0	%REC		70-130		SW8260B	06/01/12 21:52 / abb
Surr: Toluene-d8	105	%REC		70-130		SW8260B	06/01/12 21:52 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-004
Client Sample ID MrM-MW-12

Report Date: 06/11/12
Collection Date: 05/23/12 14:30
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.10		A4500-H B	05/24/12 15:01 / cmm
Conductivity @ 25 C	720	umhos/cm		1.0		A2510 B	05/24/12 15:01 / cmm
INORGANICS							
Chloride	4	mg/L		1		E300.0	05/30/12 00:06 / zeg
Sulfate	32	mg/L		1		E300.0	05/30/12 00:06 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	05/25/12 15:14 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		SW6020	05/30/12 20:08 / dck
Arsenic	ND	mg/L		0.005		SW6020	05/30/12 20:08 / dck
Barium	ND	mg/L		0.1		SW6020	05/30/12 20:08 / dck
Beryllium	ND	mg/L		0.001		SW6020	05/30/12 20:08 / dck
Cadmium	ND	mg/L		0.001		SW6020	05/30/12 20:08 / dck
Chromium	ND	mg/L		0.01		SW6020	05/30/12 20:08 / dck
Cobalt	ND	mg/L		0.01		SW6020	05/30/12 20:08 / dck
Copper	ND	mg/L		0.01		SW6020	05/30/12 20:08 / dck
Iron	0.63	mg/L		0.03		SW6020	05/30/12 20:08 / dck
Lead	ND	mg/L		0.01		SW6020	05/30/12 20:08 / dck
Nickel	ND	mg/L		0.01		SW6020	05/30/12 20:08 / dck
Selenium	ND	mg/L		0.005		SW6020	05/30/12 20:08 / dck
Silver	ND	mg/L		0.005		SW6020	05/30/12 20:08 / dck
Thallium	ND	mg/L		0.005		SW6020	05/30/12 20:08 / dck
Vanadium	ND	mg/L		0.1		SW6020	05/30/12 20:08 / dck
Zinc	ND	mg/L		0.01		SW6020	05/30/12 20:08 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/12 22:22 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/12 22:22 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Carbon disulfide	0.17	ug/L	J	1.0		SW8260B	06/01/12 22:22 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-004
Client Sample ID MrM-MW-12

Report Date: 06/11/12
Collection Date: 05/23/12 14:30
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/12 22:22 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/12 22:22 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/12 22:22 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/01/12 22:22 / abb
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	06/01/12 22:22 / abb
Surr: Dibromofluoromethane	85.0	%REC		70-130		SW8260B	06/01/12 22:22 / abb
Surr: p-Bromofluorobenzene	90.0	%REC		70-130		SW8260B	06/01/12 22:22 / abb
Surr: Toluene-d8	111	%REC		70-130		SW8260B	06/01/12 22:22 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-005
Client Sample ID MrM-MW-12 Dup

Report Date: 06/11/12
Collection Date: 05/23/12 14:35
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.10		A4500-H B	05/24/12 15:03 / cmm
Conductivity @ 25 C	720	umhos/cm		1.0		A2510 B	05/24/12 15:03 / cmm
INORGANICS							
Chloride	4	mg/L		1		E300.0	05/30/12 00:44 / zeg
Sulfate	32	mg/L		1		E300.0	05/30/12 00:44 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	05/25/12 15:15 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		SW6020	05/30/12 20:13 / dck
Arsenic	ND	mg/L		0.005		SW6020	05/30/12 20:13 / dck
Barium	ND	mg/L		0.1		SW6020	05/30/12 20:13 / dck
Beryllium	ND	mg/L		0.001		SW6020	05/30/12 20:13 / dck
Cadmium	ND	mg/L		0.001		SW6020	05/30/12 20:13 / dck
Chromium	ND	mg/L		0.01		SW6020	05/30/12 20:13 / dck
Cobalt	ND	mg/L		0.01		SW6020	05/30/12 20:13 / dck
Copper	ND	mg/L		0.01		SW6020	05/30/12 20:13 / dck
Iron	0.63	mg/L		0.03		SW6020	05/30/12 20:13 / dck
Lead	ND	mg/L		0.01		SW6020	05/30/12 20:13 / dck
Nickel	ND	mg/L		0.01		SW6020	05/30/12 20:13 / dck
Selenium	ND	mg/L		0.005		SW6020	05/30/12 20:13 / dck
Silver	ND	mg/L		0.005		SW6020	05/30/12 20:13 / dck
Thallium	ND	mg/L		0.005		SW6020	05/30/12 20:13 / dck
Vanadium	ND	mg/L		0.1		SW6020	05/30/12 20:13 / dck
Zinc	ND	mg/L		0.01		SW6020	05/30/12 20:13 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/12 22:53 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/12 22:53 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-005
Client Sample ID MrM-MW-12 Dup

Report Date: 06/11/12
Collection Date: 05/23/12 14:35
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/12 22:53 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/12 22:53 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/12 22:53 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/01/12 22:53 / abb
Surr: 1,2-Dichloroethane-d4	101	%REC		70-130		SW8260B	06/01/12 22:53 / abb
Surr: Dibromofluoromethane	87.0	%REC		70-130		SW8260B	06/01/12 22:53 / abb
Surr: p-Bromofluorobenzene	89.0	%REC		70-130		SW8260B	06/01/12 22:53 / abb
Surr: Toluene-d8	110	%REC		70-130		SW8260B	06/01/12 22:53 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-006
Client Sample ID MrM-MW-HW

Report Date: 06/11/12
Collection Date: 05/23/12 16:05
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.10		A4500-H B	05/24/12 15:05 / cmm
Conductivity @ 25 C	800	umhos/cm		1.0		A2510 B	05/24/12 15:05 / cmm
INORGANICS							
Chloride	8	mg/L		1		E300.0	05/30/12 00:57 / zeg
Sulfate	31	mg/L		1		E300.0	05/30/12 00:57 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.05	mg/L		0.01		E353.2	05/25/12 15:16 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		SW6020	05/30/12 20:18 / dck
Arsenic	ND	mg/L		0.005		SW6020	05/30/12 20:18 / dck
Barium	ND	mg/L		0.1		SW6020	05/30/12 20:18 / dck
Beryllium	ND	mg/L		0.001		SW6020	05/30/12 20:18 / dck
Cadmium	ND	mg/L		0.001		SW6020	05/30/12 20:18 / dck
Chromium	ND	mg/L		0.01		SW6020	05/30/12 20:18 / dck
Cobalt	ND	mg/L		0.01		SW6020	05/30/12 20:18 / dck
Copper	ND	mg/L		0.01		SW6020	05/30/12 20:18 / dck
Iron	ND	mg/L		0.03		SW6020	05/30/12 20:18 / dck
Lead	ND	mg/L		0.01		SW6020	05/30/12 20:18 / dck
Nickel	ND	mg/L		0.01		SW6020	05/30/12 20:18 / dck
Selenium	ND	mg/L		0.005		SW6020	05/30/12 20:18 / dck
Silver	ND	mg/L		0.005		SW6020	05/30/12 20:18 / dck
Thallium	ND	mg/L		0.005		SW6020	05/30/12 20:18 / dck
Vanadium	ND	mg/L		0.1		SW6020	05/30/12 20:18 / dck
Zinc	0.04	mg/L		0.01		SW6020	05/30/12 20:18 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/12 23:23 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/12 23:23 / abb
Benzene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Bromoform	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Chloroform	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H12050404-006
Client Sample ID MrM-MW-HW

Report Date: 06/11/12
Collection Date: 05/23/12 16:05
DateReceived: 05/24/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/12 23:23 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/12 23:23 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/12 23:23 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Styrene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Toluene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/01/12 23:23 / abb
Surr: 1,2-Dichloroethane-d4	101	%REC		70-130		SW8260B	06/01/12 23:23 / abb
Surr: Dibromofluoromethane	86.0	%REC		70-130		SW8260B	06/01/12 23:23 / abb
Surr: p-Bromofluorobenzene	93.0	%REC		70-130		SW8260B	06/01/12 23:23 / abb
Surr: Toluene-d8	110	%REC		70-130		SW8260B	06/01/12 23:23 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

APPENDIX E: HISTORICAL GROUNDWATER QUALITY

Well	Date	pH (std units)	SC (umhos/cm)	Chloride (mg/l)	Sulfate (mg/l)	Nitrate + Nitrite (mg/l)	Metals (mg/l)															
							Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-1	8/10/93	7.5	544	16	75	0.77		<0.005	0.1		<0.001	<0.01			<0.03	<0.01		<0.005	<0.005			
	12/8/95																					
	3/30/96	7.2	789	19	34	0.53	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	0.08	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.02
	11/21/03	7.6	684	13	28		<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.3	716	9	30	1.62	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	11/10/06	7.6	775	13	25	2.42	<0.01	<0.005	0.29	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	6/28/07	7.5	7.81	19	24	1.49	<0.01	<0.005	0.24	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	1/22/09	7.5	805	19	23	1.90	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
MW-2	8/10/93	6.9	823	47	52	<0.05		<0.005	0.2		<0.001	<0.01			<0.03	<0.01		<0.005	<0.005			
	6/28/07	7.3	946	54	60	0.21	<0.01	<0.005	0.14	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-4	8/10/93	7.8	721	28	51	0.43		<0.005	0.2		0.003	<0.01			<0.01	0.03		<0.005	<0.005			
	11/21/03	7.8	670	16	59	2.81	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
MW-5	11/21/03	7.7	718	5	68	2.72	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.054	<0.005	<0.1	<0.1	<0.01
	8/19/04	7.9	926	10	100	2.81	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.055	<0.005	<0.1	<0.1	0.02
	11/30/05	7.4	841	11	46	1.96	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.058	<0.005	<0.1	<0.1	<0.01
	11/9/06	7.6	969	5	43	2.66	<0.01	<0.005	0.11	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	0.184	<0.0002	<0.01	<0.05	<0.01
	6/27/07	7.7	937	7	50	1.89	<0.01	<0.005	0.11	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	0.124	<0.0002	<0.01	<0.05	<0.01
	12/19/07	7.6	880	9	49	1.70																
	6/3/09	7.6	1020	14	55	2.12	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.111	<0.005	<0.1	<0.1	<0.01
MW-6	6/27/07	7.6	1040	5	56	0.18	<0.01	<0.005	0.15	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-6M	8/20/04	7.9	388	4	20	1.68	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.06
MW-7	12/8/95																					
	3/30/96	6.8	942	34	40	<0.05	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	0.28	<0.01	0.01	<0.005	<0.005	<0.1	<0.10	0.02
MW-7R	6/28/07	7.3	1350	80	157	2.10	<0.01	<0.005	0.05	<0.001	<0.0005	<0.002	<0.005	0.002	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-8	11/21/03	7.3	743	17	38	1.03	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.4	746	10	50	2.64	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.08
MW-9	12/8/95																					
	3/30/96	7.4	734	13	26	<0.05	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.03
MW-9R	10/24/97	7.7	814	14	99	4.74	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
	8/20/04	7.6	760	10	90	5.58	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	6/2/09	7.5	952	24	75	3.47	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.0	922	14	82	4.04	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	10/26/10	8.1	896	17	68	2.95	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/11	7.2	882	25	36	1.52	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/11	7.2	892	25	36	1.52	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/18/11	7.4	994	28	56	0.93																
	5/23/12	7.0	1000	30	55	2.49																

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

							Metals (mg/l)															
Well	Date	pH (std units)	SC (umhos/cm)	Chloride (mg/l)	Sulfate (mg/l)	Nitrate + Nitrite (mg/l)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-10	11/14/94	7.5	684	47	30	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.02
	12/29/94																					
	5/25/95	8.0	668	45	25	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.06
	12/8/95	7.4	646	15	30	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.08
	3/30/96	7.4	647	6	25	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.2	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.03
MW-10R	10/24/97	7.6	1100	23	111	2.01	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	0.034	<0.005	<0.1	<0.1	<0.01
	6/29/98	7.5	1130	18	99	1.7	0.04J	0.004J	<0.1	0.0009J	<0.001	<0.01	<0.01	<0.01	0.14	<0.01	<0.01	0.091	<0.005	<0.1	<0.1	0.02
	11/17/98	7.5	947	19	113	2.18	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.093	<0.005	<0.1	<0.1	<0.01J
	5/4/99	7.7	1070	19	104	1.85	<0.05	0.008	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.35	<0.01	<0.01	0.101	<0.005	<0.1	<0.1	0.02
	12/3/99	7.3	1070	14	112	2.01	<0.05	<0.005J	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	0.114	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.7	970	10	100	2.39	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.050	<0.005	<0.1	<0.1	0.07
	1/22/09	7.8	1080	17	89	1.63	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.060	<0.005	<0.1	<0.1	<0.01
	6/2/09	7.7	1020	23	82	1.42	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.011	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.0	1080	17	88	1.82	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.081	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.2	1080	17	88	1.95	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.071	<0.005	<0.1	<0.1	<0.01
MW-11	10/26/10	8.2	655	3	42	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/24/11	7.7	612	3	38	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.18	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/17/11	8.0	620	2	38	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.22	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/17/11	8.0	623	2	38	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.19	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/12	7.3	650	3	41	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.22	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
MW-11M	8/20/04	7.3	1110	20	70	2.36	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.08
MW-12	10/27/10	8.1	683	5	35	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.31	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/27/10	8.1	698	4	33	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.30	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/25/11	7.4	668	5	31	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.53	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/18/11	7.7	663	4	31	0.03	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.59	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/12	7.1	720	4	32	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.63	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/12	7.1	720	4	32	<0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.63	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
MW-13	10/24/97	7.9	441	<1	80	0.15	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
MW-OW	11/14/94	7.3	771	29	29	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.57	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.15
	12/29/94																					
	5/25/95	7.8	721	4	33	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.58	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.08
	12/8/95	7.3	718	4	37	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	0.01	<0.005	<0.005	<0.1	<0.10	0.09
	3/30/96	7.4	732	5	29	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	1.01	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.13
	10/24/97	7.6	691	6	37	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.57	<0.01	0.01	<0.005	<0.005	<0.1	<0.1	0.05
	6/29/98	7.3	714	9	34	<0.05	<0.05	<0.005	0.07J	<0.001	<0.001	<0.01	<0.01	<0.01	1.01	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.12
	11/17/98	7.5	757	119	15	<0.05	<0.05	<0.005J	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.00	<0.01	0.03	<0.005	<0.005	<0.1	<0.1	0.30
	5/4/99	7.7	687	7	34	<0.05	<0.05	<0.005	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.68	<0.01	0.01	<0.005	<0.005	<0.1	<0.1	0.06
	12/2/99	7.4	675	4	36	<0.05	<0.05	<0.005	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.73	<0.01	0.01	<0.005	<0.005	<0.1	<0.1	0.03

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	pH (std units)	SC (umhos/cm)	Chloride (mg/l)	Sulfate (mg/l)	Nitrate + Nitrite (mg/l)	Metals (mg/l)															
							Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-OW	8/20/04	7.5	794	10	90	<0.05	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.68
(cont.)	8/20/04	7.5	802	10	100	<0.05	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.64
	11/10/06	7.7	718	22	27	<0.02	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	0.31	<0.002	0.01	<0.005	<0.0002	<0.01	<0.05	0.36
	6/28/07	7.7	692	10	36	<0.01	<0.01	<0.005	0.07	<0.001	<0.0005	<0.002	<0.005	<0.001	0.41	<0.002	0.01	<0.005	<0.0002	<0.01	<0.05	0.16
	12/18/07	7.5	669	47	2	<0.01	<0.01	<0.005	0.09	<0.001	<0.0005	<0.002	<0.005	<0.001	3.79	<0.002	0.01	<0.005	<0.0002	<0.01	<0.05	3.17
	1/21/09	7.8	678	49	<1	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.87	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.29
	6/1/09	7.6	654	51	<1	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.47	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.48
	6/1/09	7.7	649	51	<1	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.47	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.48
	6/5/09																					
	10/26/09	8.1	683	14	18	<0.05	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.38	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.04
	10/25/10	8.2	646	17	5	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.81	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	0.46
	5/24/11	7.8	739	54	17	<0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.86	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	1.28
	10/18/11	8.0	676	5	30										1.22							1.03
	5/22/12	7.2	740	12	32										1.62							0.90
MW-HW	6/10/80	7.6	848	2.5	107						<0.002	0.007		0.013	0.75	<0.04	0.01		0.006		0.007	0.04
	11/14/94	7.1	815	3	100	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.14	<0.01	<0.1	<0.005	<0.005	<0.1	<0.10	0.04
	5/25/95	7.8	780	8	38	0.12	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.1	<0.005	<0.005	<0.1	<0.10	0.02
	12/8/95	7.2	786	4	75	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.10	0.05
	3/30/96	7.4	796	8	29	0.44	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	0.005	<0.005	<0.1	<0.10	0.04
	10/24/97	7.4	779	4	83	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	6/29/98	7..3	723	7	55	<0.05	<0.05	<0.005	0.06J	<0.001	<0.001	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.05
	11/17/98	7.2	668	4	87	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.52	<0.01	<0.01J	<0.005	<0.005	<0.1	<0.1	0.04
	5/4/99	7.6	755	4	87	0.15	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.25	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.04
	12/2/99	7.2	763	4	105	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.34	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	8/20/04	7.6	705	10	40	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	11/29/05	7.4	676	5	78	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	11/29/05	7.4	700	6	77	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
	11/10/06	7.5	753	9	35	<0.05	<0.01	<0.005	0.06	<0.001	<0.0005	<0.002	<0.005	0.001	0.28	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	0.03
	6/28/07	7.7	756	10	36	0.17	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	0.010	<0.0002	<0.01	<0.05	<0.01
	12/18/07	7.4	756	9	36	0.01	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	0.02
	1/21/09	7.5	837	8	34	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	6/1/09	7.5	773	10	37	0.17	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	10/26/09	8.0	795	8	36	<0.05	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.1	<0.1	0.10
	5/24/11	7.7	749	9	28	0.13	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	0.03
	10/18/11	7.8	754	7	30	0.01	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	0.02
	5/23/12	7.3	800	8	31	0.05	<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.01	<0.005	<0.005	<0.005	<0.1	0.04
Richards	6/28/07	7.9	645	5	47	<0.01	<0.01	<0.005	0.07	<0.001	<0.0005	<0.002	<0.005	<0.001	0.14	<0.002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		VOCs (ug/l)																								
Well	Date	Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene
MW-1	8/10/93			<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1			<1				<1	<1	<1	<1	
	12/8/95	<25	<25	<5	<5	<5	<5	<5	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5
	3/30/96	43J	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	11/21/03	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/10/06	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/28/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/22/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-2	8/10/93			<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1			<1				<1	<1	<1	<1	
	6/28/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.49J
MW-4	8/10/93			<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1			<1				<1	<1	<1	<1	
	11/21/03	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.59J	<1	<1	<1	2.0
MW-5	11/21/03	29	<20	22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8/19/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/30/05	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.19J	<1	<1	<1	<1
	11/9/06	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.22J	<1	<1	<1	<1
	6/27/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/19/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/3/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-6	6/27/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-6M	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-7	12/8/95	<25	<25	<5	<5	<5	<5	<5	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5
	3/30/96	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	1.3
MW-7R	6/28/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-8	11/21/03	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-9	12/8/95	<25	<25	<5	<5	<5	<5	<5	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5
	3/30/96	73	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	2.1
MW-9R	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	0.28J	<1	<1	<1	1.1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.34J	<1	<1	<1	0.32J
	6/2/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.8
	10/27/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.8
	10/26/10	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.8
	5/23/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.54J	<1	<1	<1	18
	5/23/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.52J	<1	<1	<1	18
	10/18/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.40J	<1	<1	<1	15
	5/23/12	<20	<20	<1	<1	<1	<1	<1	0.59J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.44J	<1	<1	11

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																								
		Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene
MW-10	11/14/94	<50	<20	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<2	1.9	0.32J	<1	<1	22
	12/29/94			<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5
	5/25/95	34J	<20	2.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.7	<1	<1	<1	<1	<1	<2	2.5	0.32J	<1	<1	45
	12/8/95	<50	<20	0.35J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	0.27J	<1	<1	<1	4.0
	3/30/96	43J	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	1.3
MW-10R	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	0.35J	<1	<1	<1	<1
	6/29/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	11/17/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	5/4/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	12/3/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/22/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/2/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-11	10/26/10	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/24/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/17/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/17/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<20	<20	<1	<1	<1	<1	<1	0.26J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-11M	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.3	0.36J	<1	<1	0.41J
MW-12	10/27/10	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.57J
	10/27/10	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.62J
	5/25/11	<20	<20	<1	<1	<1	<1	<1	0.14J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.80J
	10/18/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<20	<20	<1	<1	<1	<1	<1	0.17J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-13	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
MW-OW	11/14/94	<50	<20	0.82J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<2	1.1	<1	<1	<1	37
	12/29/94			<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	0.73
	5/25/95	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	1.2
	12/8/95	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	3/30/96	69	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	3.3
	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	3.0
	6/29/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	8.6
	11/17/98	<50	<20	2.4	<1	<1	<1	<1	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	3.8	0.38J	<1	<1	148
	5/4/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	1.6
	12/2/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	2.1

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		VOCs (ug/l)																								
Well	Date	Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene
MW-OW	8/20/04	<20	<20	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.92J	0.25J	<1	<1	78
(cont.)	8/20/04	<20	<20	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.89J	0.24J	<1	<1	77
	11/10/06	<20	<20	0.38J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.18J	<1	<1	<1	27
	6/28/07	<20	<20	0.14J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9.0
	12/18/07	<20	<20	1.9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	62
	1/21/09	<20	<20	1.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	33
	6/1/09	<20	<20	0.61J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	18
	6/1/09	<20	<20	0.67J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	18
	6/5/09			1.2	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	46
	10/26/09	<20	<20	0.89J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	22
	10/25/10	<20	<20	0.74J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	20
	5/24/11	<20	<20	1.2	0.45J	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.20J	<1	<1	<1	<1	<1	<1	<1	<1	0.17J	<1	30
	10/18/11	<20	<20	<1	<1	<1	<1	<1	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.7
	5/22/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	8.9
MW-HW	6/10/80																									
	11/14/94	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	5/25/95	29J	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	12/8/95	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	3/30/96	71	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	10/24/97	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	6/29/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	11/17/98	<50	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	5/4/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	12/2/99	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1
	8/20/04	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/29/05	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/29/05	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/10/06	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/28/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/18/07	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/21/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/1/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/26/09	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/24/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/18/11	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Richards	6/28/07			<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																									
		trans-1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-1	8/10/93	<1		<1	<1	<1		<1			<1	<1		<1	<1	1.2	<1J	<1	<1	<1	<1	<1	<1			<1
	12/8/95	<5	<5	<5	<5	<5	<25		<25	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/21/03	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.29J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/10/06	<1	<1	<1	<1	<1	<10	<1	<20	<10	<1	<1	<1	<1	<1	0.29J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/22/09	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-2	8/10/93	<1		<1	<1	<1		<1			<1	<1		<1	<1.0	<1	<1	<1	<1	<1	<1	<1	<1			<1
	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	0.55J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-4	8/10/93	<1		<1	<1	<1		<1			<1	<1		<1	<1.0J	<1	<1	<1	<1	<1	<1	<1	<1			<1
	11/21/03	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.66J	<1	<1	<1	0.26J	<1	<1	<1	<1	<1	<1	
MW-5	11/21/03	<1	<1	<1	<1	0.96J	<20	<1	<20	<20	<1	0.90J	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	1.5	0.75J	
	8/19/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	7.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/30/05	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.22J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/9/06	<1	<1	<1	<1	<1	<10	<1	<20	<10	<1	<1	<1	<1	<1	0.16J	<1	<1	<1	<1	<1	<1	<1	0.13J	<1	0.13J
	6/27/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	0.40J	<1	<1	<1	<1	<1	<1	<1	0.29J	<1	0.29J
	12/19/07	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.20J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/3/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-6	6/27/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	0.21J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-6M	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-7	12/8/95	<5	<5	<5	<5	<5	<25		<25	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.21J	0.27J	<1	<1	<1	<1	<1	<1	<1	0.16J	<1	
MW-7R	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-8	11/21/03	<1	<1	<1	<1	<1	<20	<1	<20	<20	0.22J	<1	<1	<1	<1	0.61J	<1	<1	<1	<1	<1	<1	<1	0.27J	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.30J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-9	12/8/95	<5	<5	<5	<5	<5	<25		<25	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<5	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
MW-9R	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.67J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.53J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/2/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	1.2	<1	<1	<1	0.42J	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.76J	<1	<1	<1	0.22J	<1	<1	<1	<1	<1	<1	<1
	10/26/10	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.33J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	1.1	<1	<1	<1	0.43J	<1	<1	<1	<1	<1	<1	<1
	5/23/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	1.2	<1	<1	<1	0.43J	<1	<1	<1	<1	<1	<1	<1
	10/18/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.84J	<1	<1	<1	0.45J	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.63J	<1	<1	<1	0.46J	<1	<1	<1	<1	<1	<1	<1

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																								
		trans-1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-10	11/14/94	<1	0.51J	<1	<1	<1	<20	<1	<20	<20	1.5	<1	<1	<1	<1	0.57J	<1	<1	0.15J	<1	<1	<1	<1	<1	<1	
	12/29/94	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
	5/25/95	<1	0.43J	<1	<1	<1	<20	<1	<20	<20	1.1	<1	<1	<1	<1	<1	<1	<1	0.27J	<1	<1	<1	1.5	<1	<1	
	12/8/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.10J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
MW-10R	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	6/29/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/17/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	5/4/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/3/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.92J	<1	<1	<1	<1	<1	<1	<1	0.22J	<1	0.22J
	1/22/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/2/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.19J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.20J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-11	10/26/10	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/24/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/17/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/17/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-11M	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	0.29J	<1	<1	<1	0.99J	<1	<1	<1	0.23J	<1	<1	<1	<1	<1	<1	<1
MW-12	10/27/10	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/10	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/25/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/18/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-13	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
MW-OW	11/14/94	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	0.18J	<1	<1	<1	1.4	<1	<1	
	12/29/94	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
	5/25/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/8/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.11J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	6/29/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/17/98	0.21J	0.45J	<1	<1	<1	<20	<1	<20	<20	0.38J	<1	<1	<1	<1	<1	<1	<1	1.1	<1	<1	<1	4.6	<1	<1	
	5/4/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/2/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																									
		trans-1,2-Dichloroethene	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-OW (cont.)	8/20/04	0.20J	0.26J	<1	<1	3.0	<20	<1	<20	<20	0.22J	2.0	<1	<1	<1	0.84J	<1	<1	0.41J	<1	<1	<1	2.6	0.65J	<1	0.65J
	8/20/04	0.17J	0.25J	<1	<1	3.0	<20	<1	<20	<20	0.21J	2.1	<1	<1	<1	0.84J	<1	<1	0.43J	<1	<1	<1	2.6	0.64J	<1	0.64J
	11/10/06	<1	<1	<1	<1	0.20J	<10	<1	<20	<10	<1	0.13J	<1	<1	<1	<1	<1	<1	0.22J	<1	<1	<1	0.75J	<1	<1	<1
	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.24J	<1	<1	<1
	12/18/07	0.29J	0.18J	<1	<1	3.3	<20	<1	<20	<20	<1	4.4	<1	<1	<1	<1	<1	<1	0.67J	<1	<1	<1	1.7	0.64J	<1	0.64J
	1/21/09	<1	<1	<1	<1	3.9	<20	<1	<20	<20	<1	2.6	<1	<1	<1	<1	<1	<1	0.26J	<1	<1	<1	0.73J	0.61J	<1	0.61J
	6/1/09	<1	<1	<1	<1	0.39J	<20	<1	<20	<20	<1	0.61J	<1	<1	<1	<1	<1	<1	0.16J	<1	<1	<1	0.48J	<1	<1	<1
	6/1/09	<1	<1	<1	<1	0.30J	<20	<1	<20	<20	<1	0.55J	<1	<1	<1	<1	<1	<1	0.16J	<1	<1	<1	0.46J	<1	<1	<1
	6/5/09	<1	<1	<1	<1	2.3			<20		<1	1.7	<1	<1	<1	<1	<1	<1	0.19J	<1	<1		0.71J	0.40J	<1	0.40J
	10/26/09	<1	<1	<1	<1	5.4	<20	<1	<20	<20	<1	2.1	<1	<1	<1	<1	<1	<1	0.24J	<1	<1	<1	0.59J	0.61J	<1	0.61J
	10/25/10	<1	<1	<1	<1	1.6	<20	<1	<20	<20	<1	1.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.57J	0.41J	<1	0.41J
	5/24/11	<1	<1	<1	<1	1.6	<20	<1	17J	<20	<1	1.9	<1	<1	<1	<1	<1	<1	0.23J	<1	<1	<1	0.76J	0.42J	<1	0.42J
	10/18/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	0.40J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/22/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.22J	<1	<1	<1
MW-HW	6/10/80																									
	11/14/94	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	5/25/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	0.17J	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/8/95	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	3/30/96	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	0.14J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	10/24/97	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	6/29/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/17/98	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	5/4/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/2/99	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	8/20/04	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/29/05	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/29/05	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/10/06	<1	<1	<1	<1	<1	<10	<1	<20	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/28/07	<1	<1	<1	<1	<1	<10	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/18/07	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1/21/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	6/1/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/26/09	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/24/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/18/11	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	5/23/12	<1	<1	<1	<1	<1	<20	<1	<20	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Richards	6/28/07	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Figure E-1: pH


Concentration (std. units)
9
8.5
8
7.5
7
6.5
6
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
MW-1
MW-2
MW-4
MW-5
MW-6
MW-6M
MW-7
MW-7R
MW-8
MW-9
MW-9R
MW-10
MW-10R
MW-11
MW-11M
MW-12
MW-13 ?
MW-OW
MW-HW
Richards

Figure E-2: Specific Conductance

Figure E-3: Chloride

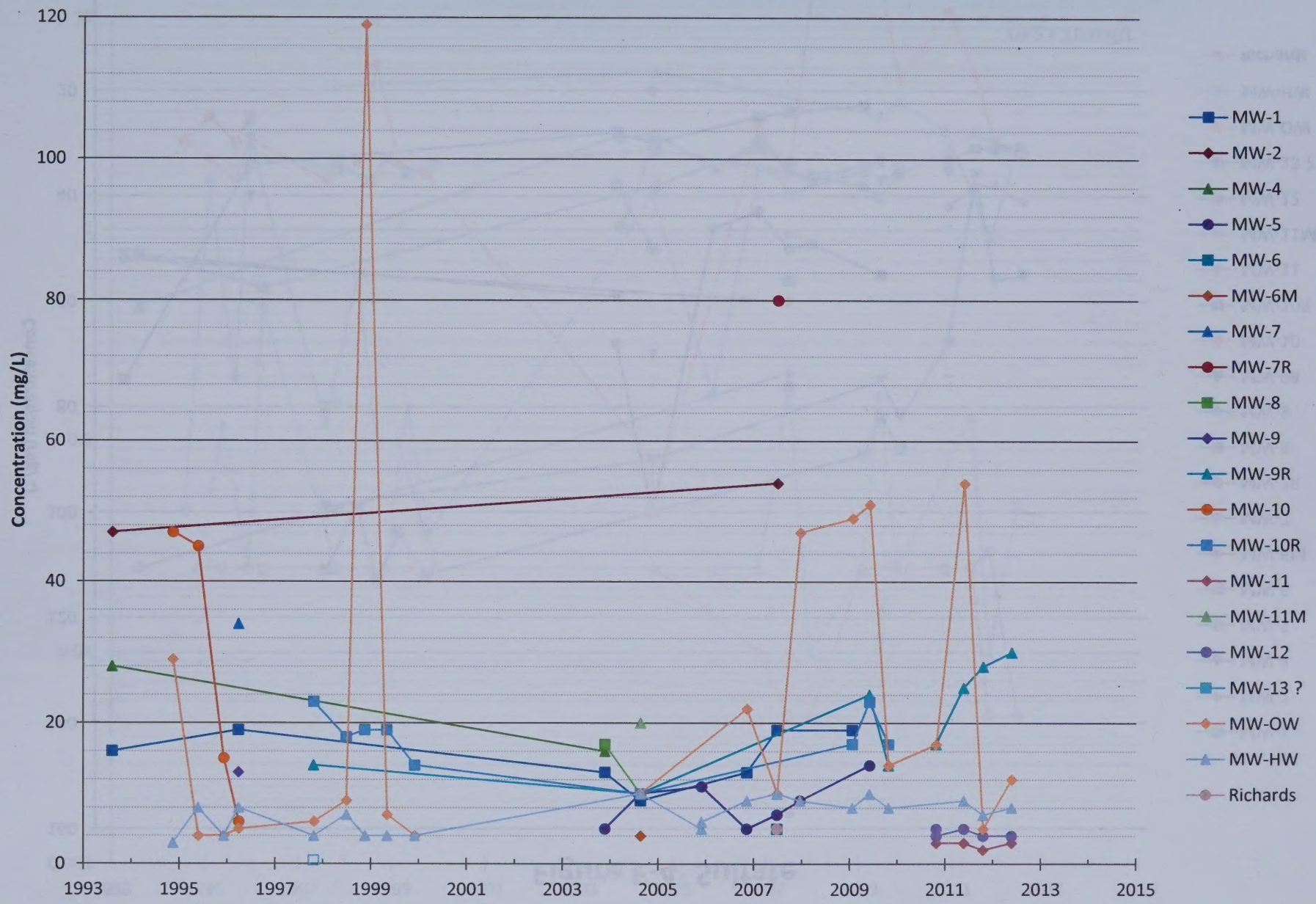


Figure E-4: Sulfate

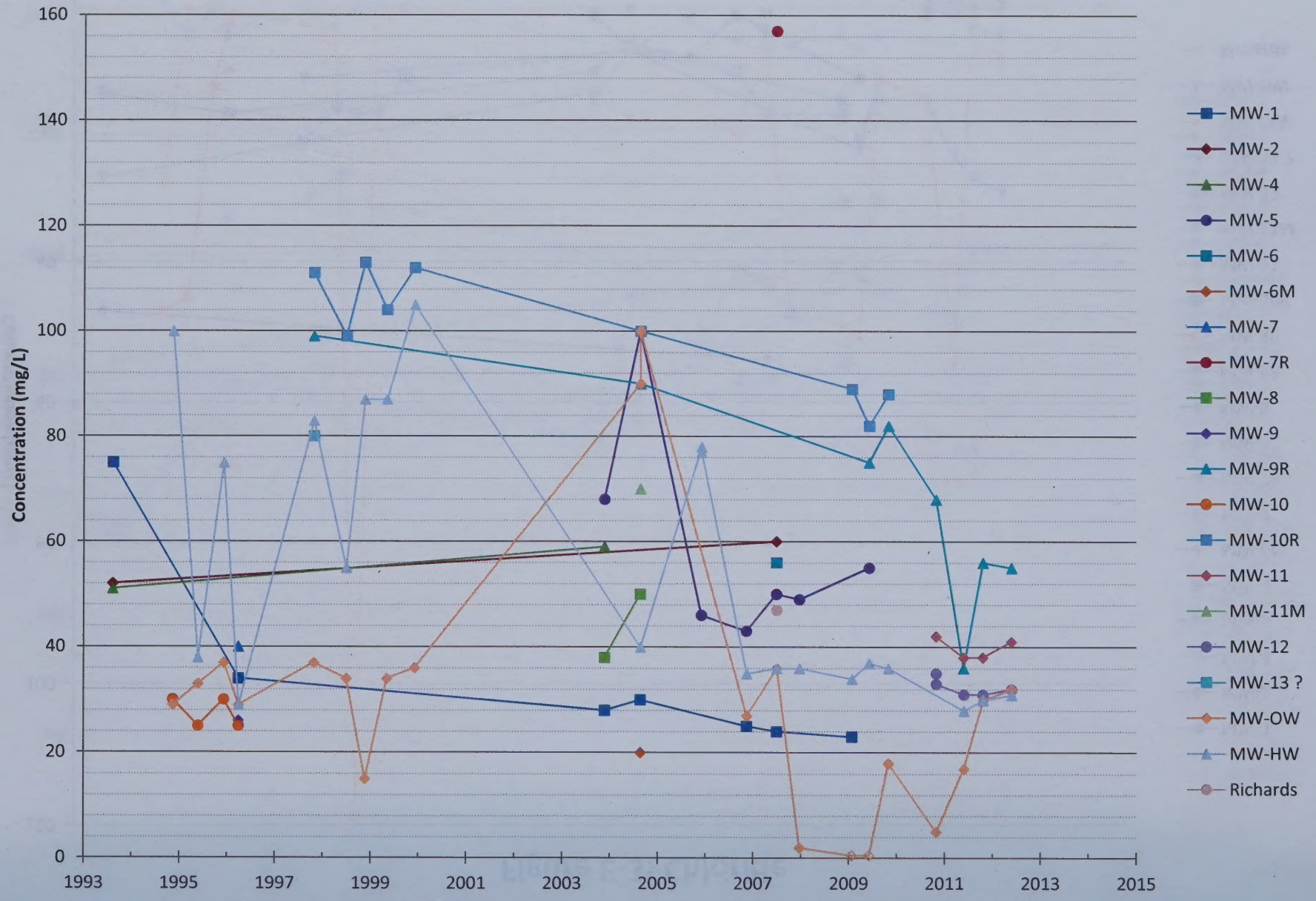


Figure E-5: Nitrate + Nitrite

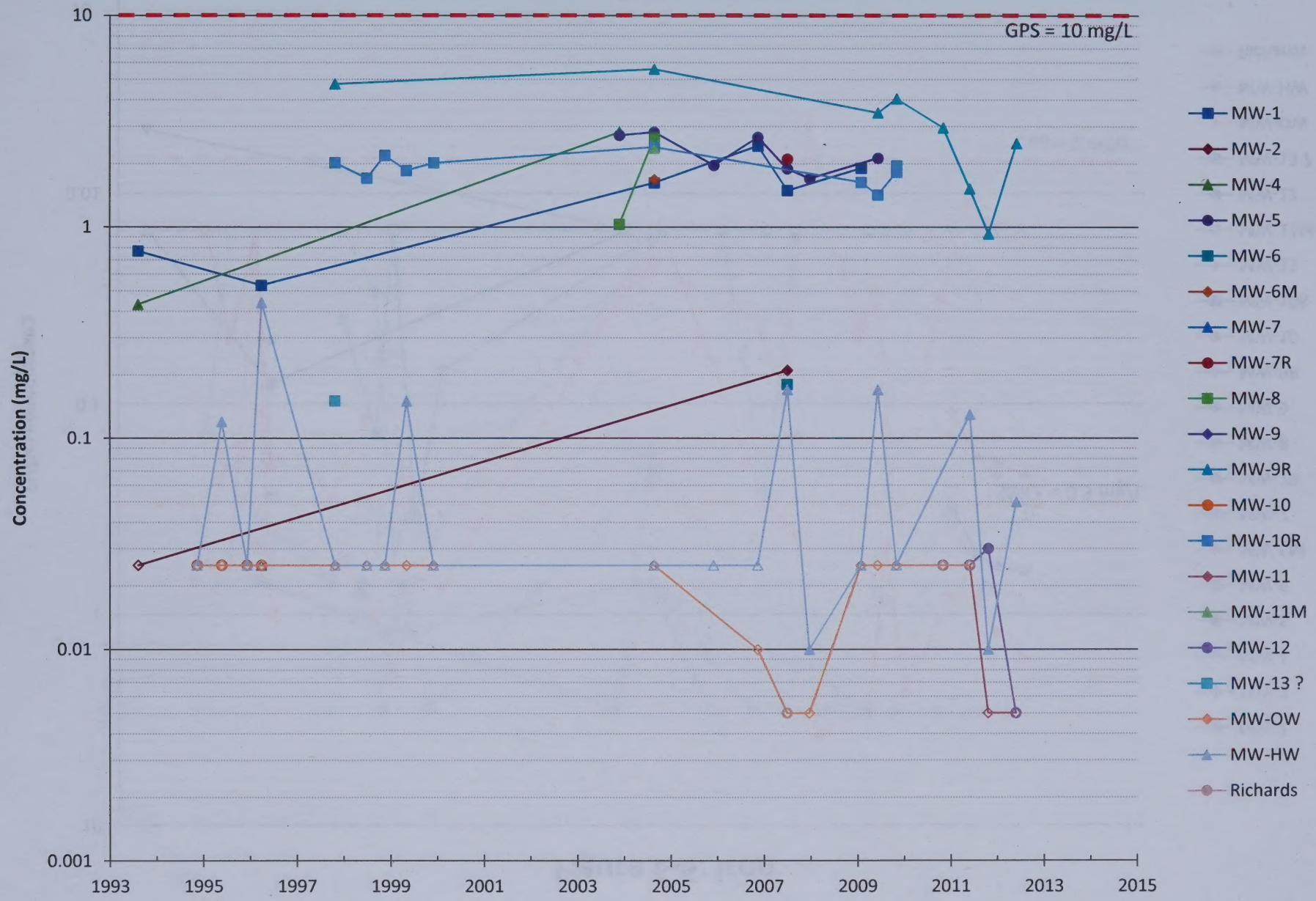


Figure E-6: Iron

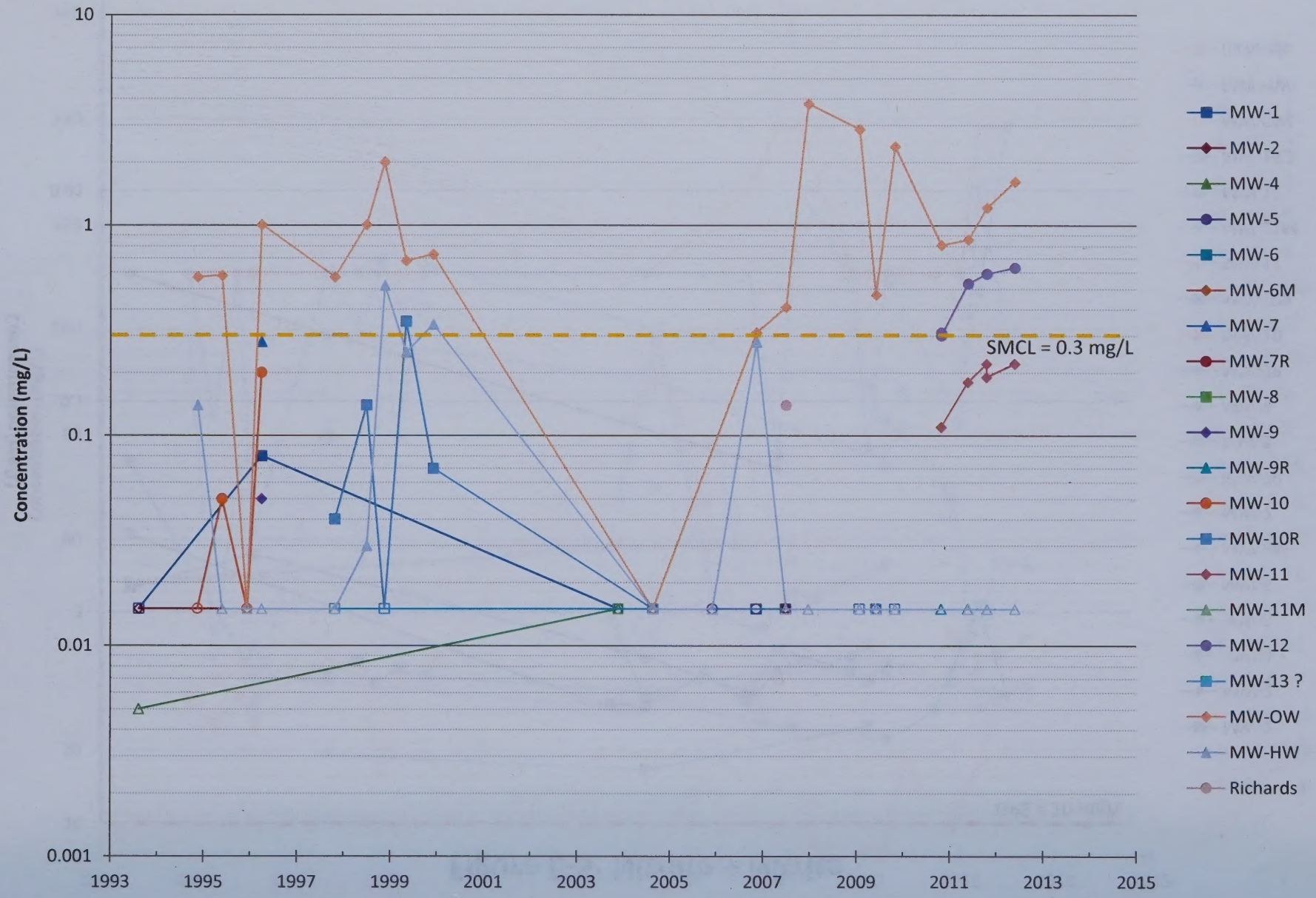


Figure E-7: Zinc

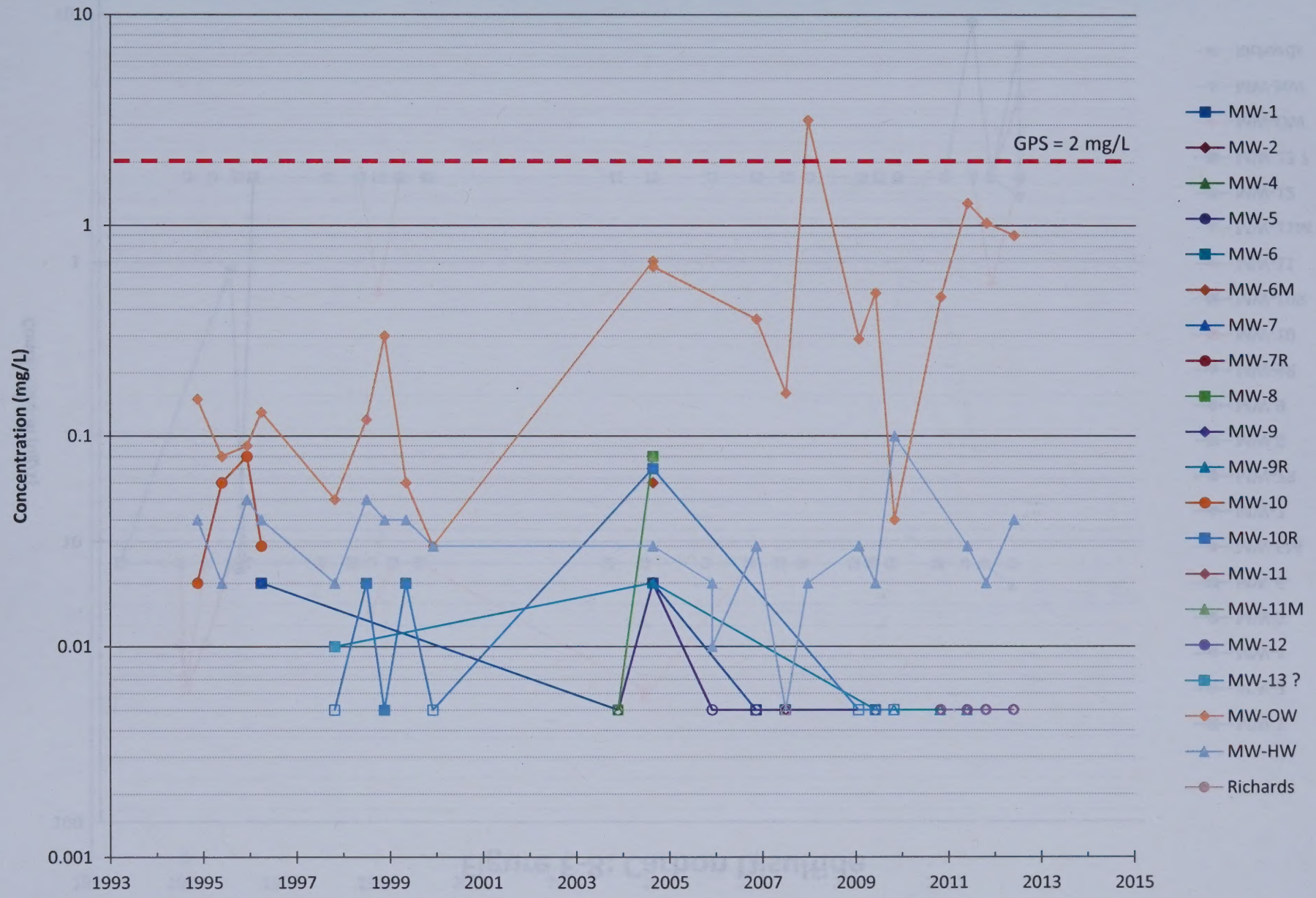


Figure E-8: Carbon Disulfide

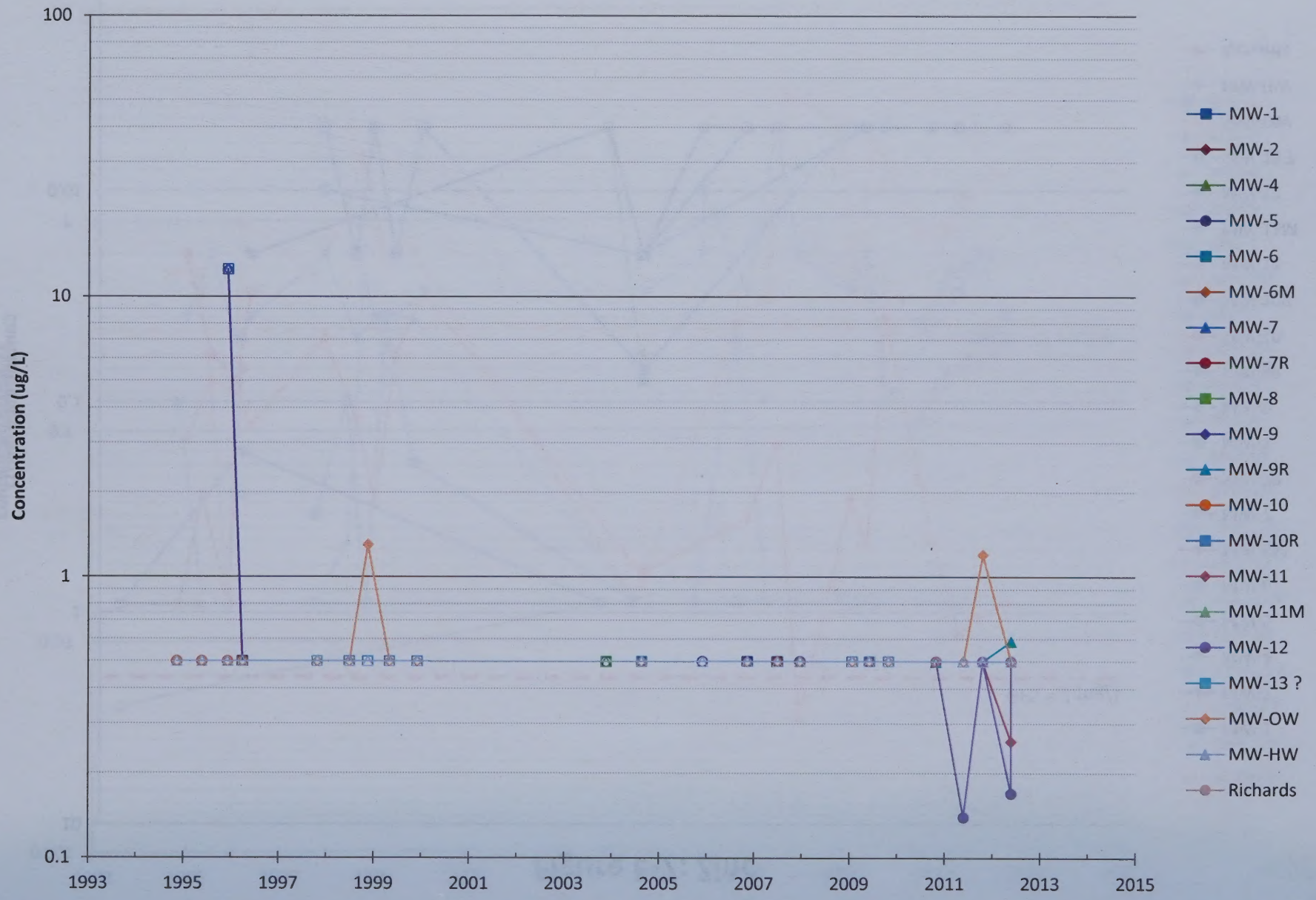


Figure E-9: 1,1-Dichoroethane

Figure E-10: cis-1,2-Dichloroethene

Figure E-11: Tetrachloroethene

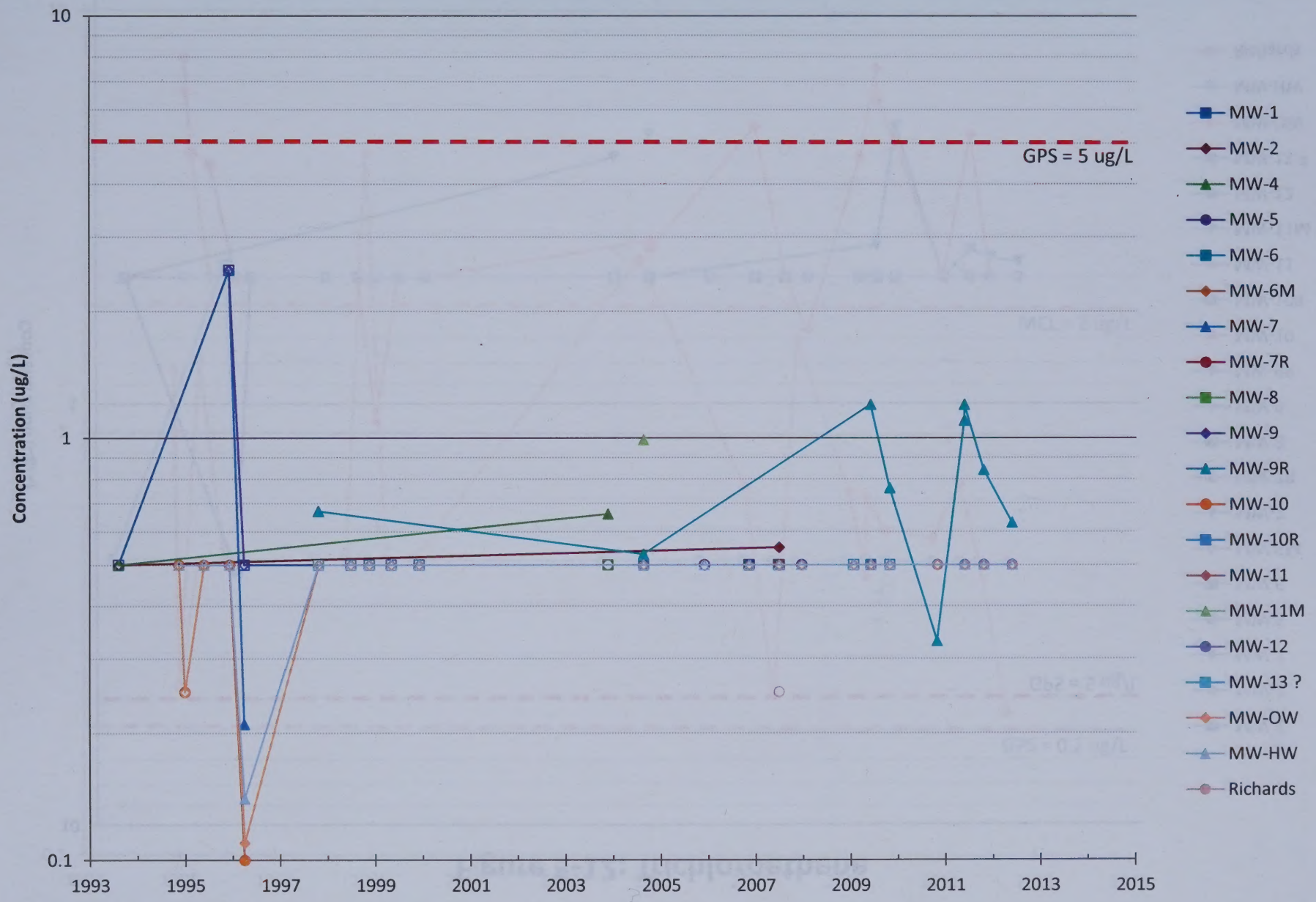


Figure E-12: Trichloroethene

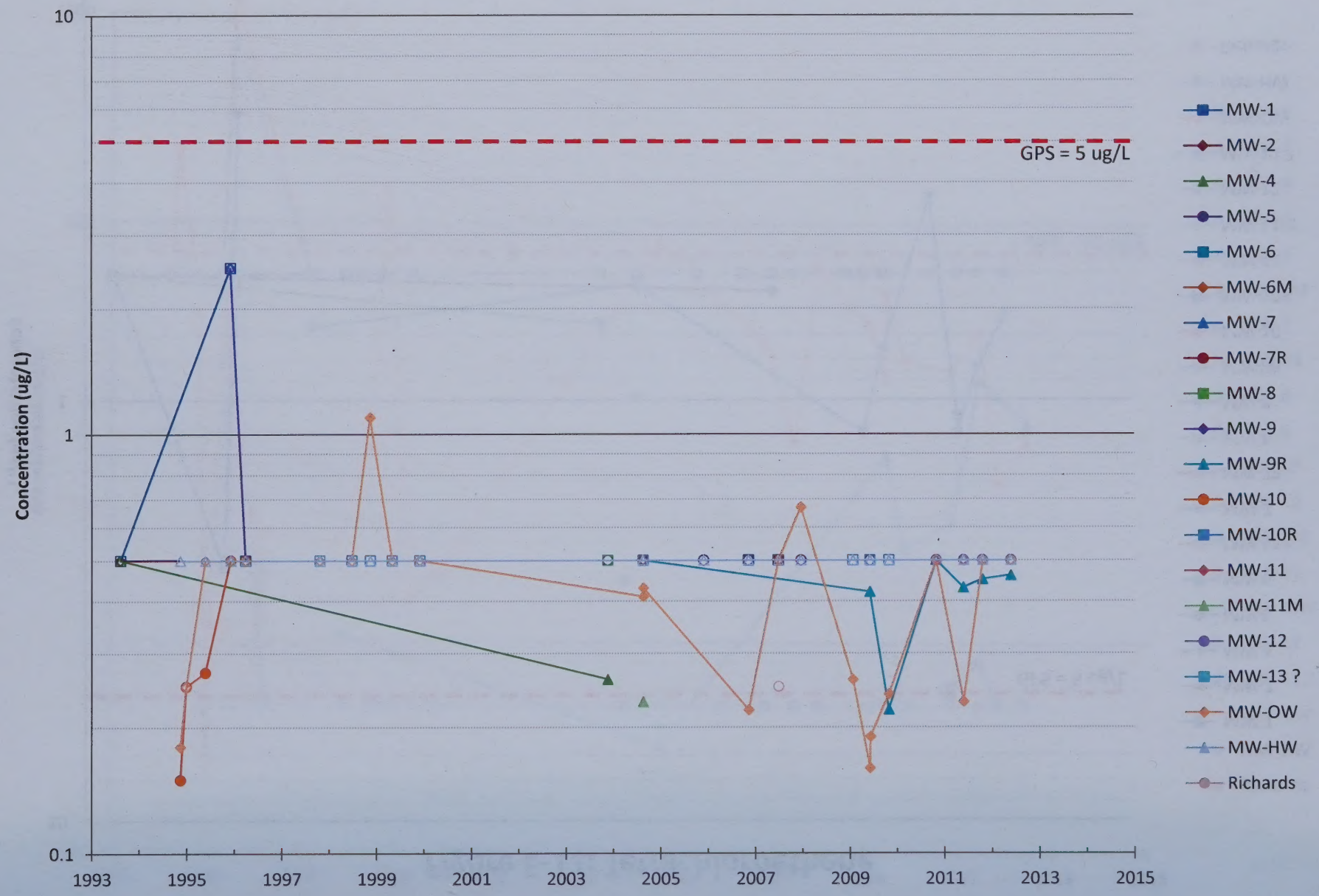


Figure E-13: Vinyl chloride

APPENDIX F: RESULTS OF STATISTICAL ANALYSES

Figure F-1: Prediction Limit Analysis for pH

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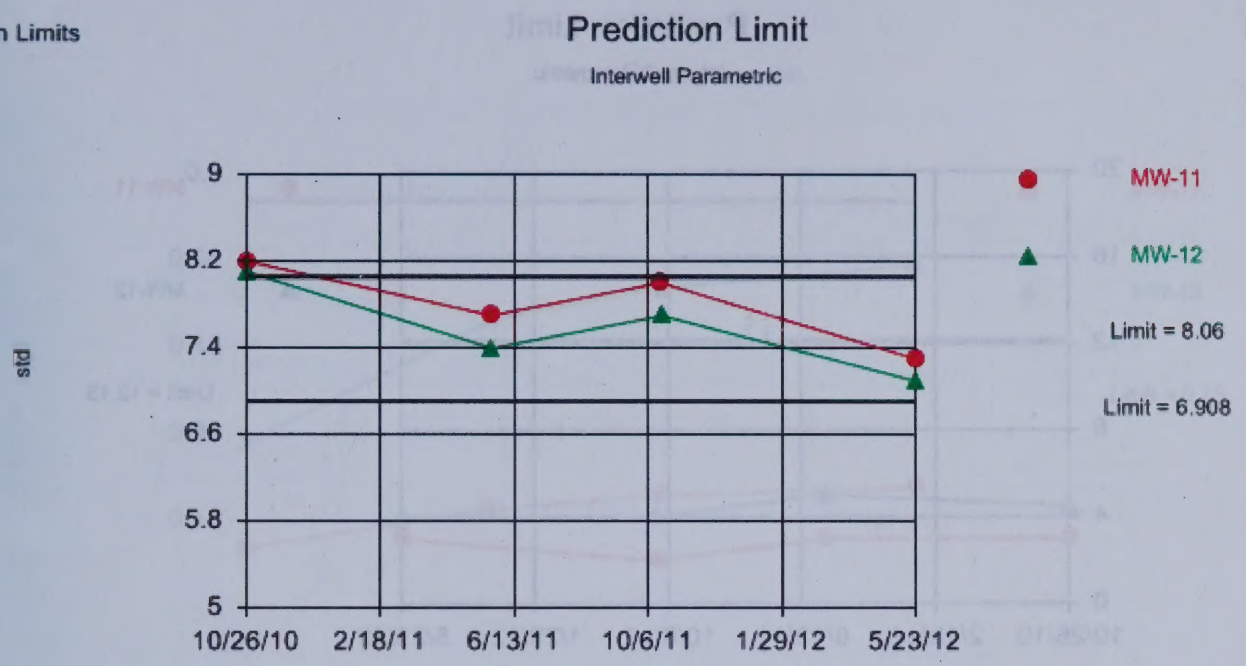
Within Limits

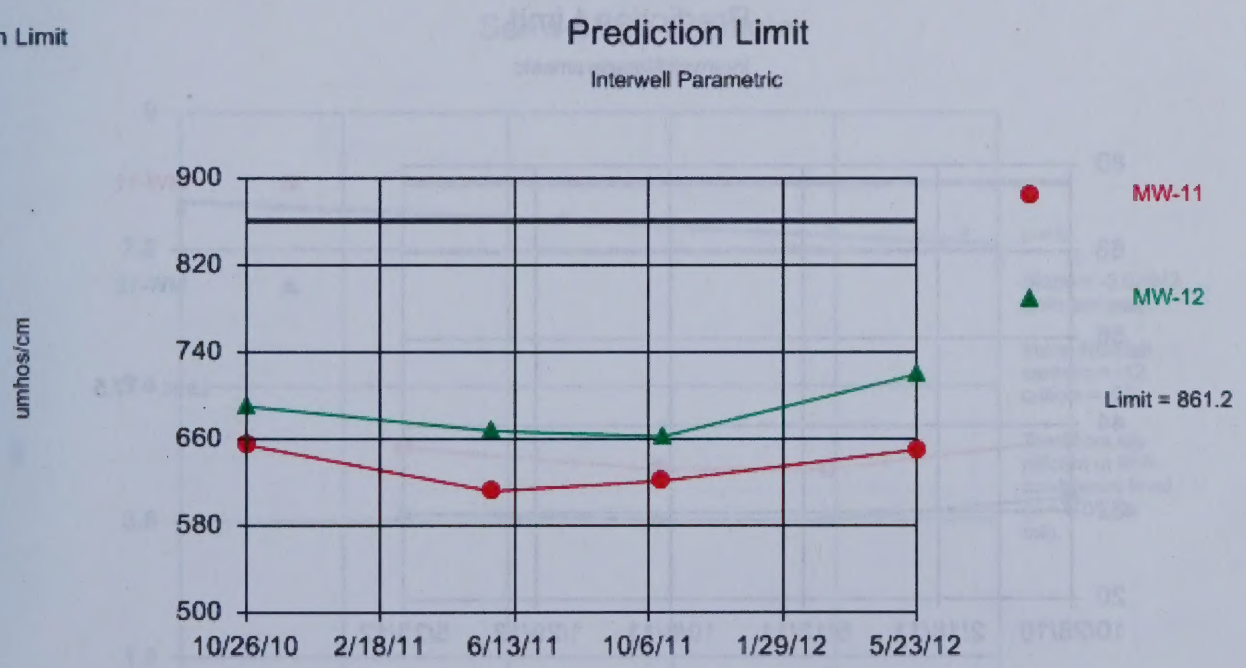


Background Data Summary: Mean=7.484, Std. Dev.=0.2322, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9719, critical = 0.873. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Figure F-2: Prediction Limit Analysis for Conductivity

v.9.0.34 For regulatory purposes only. EPA

Within Limit



Background Data Summary: Mean=765.7, Std. Dev.=44.76, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9678, critical = 0.873. Report alpha = 0.05. Individual comparison alpha = 0.025. Most recent point for each compliance well compared to limit.

Figure F-3: Prediction Limit Analysis for Chloride

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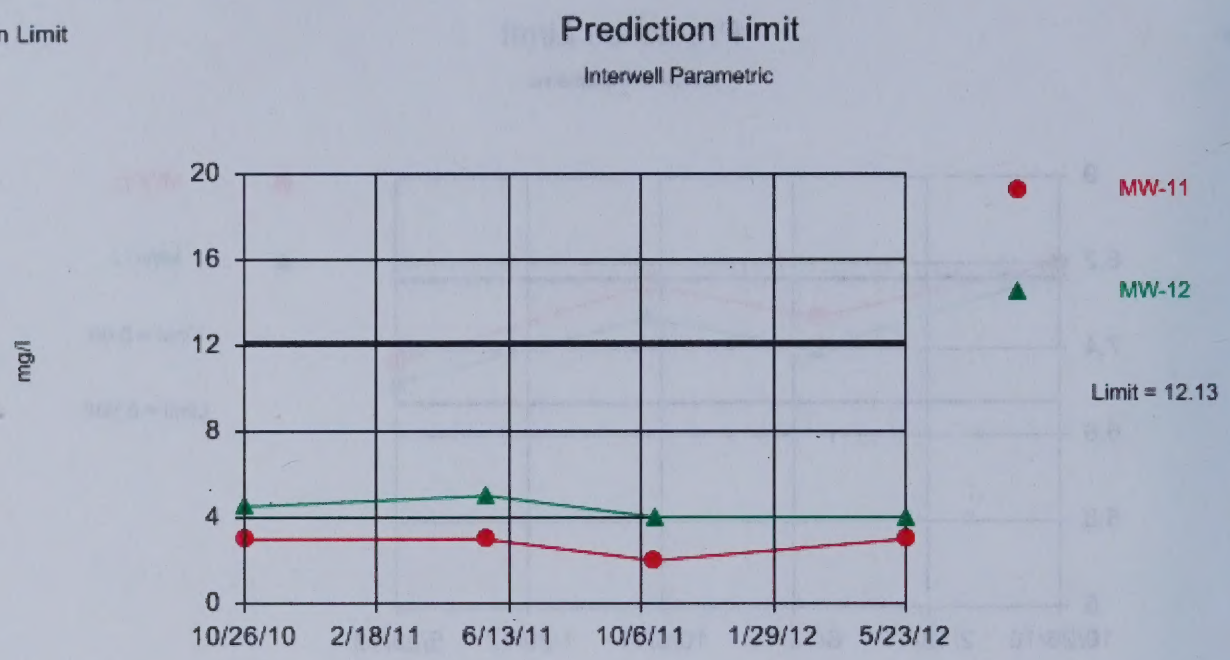
Within Limit

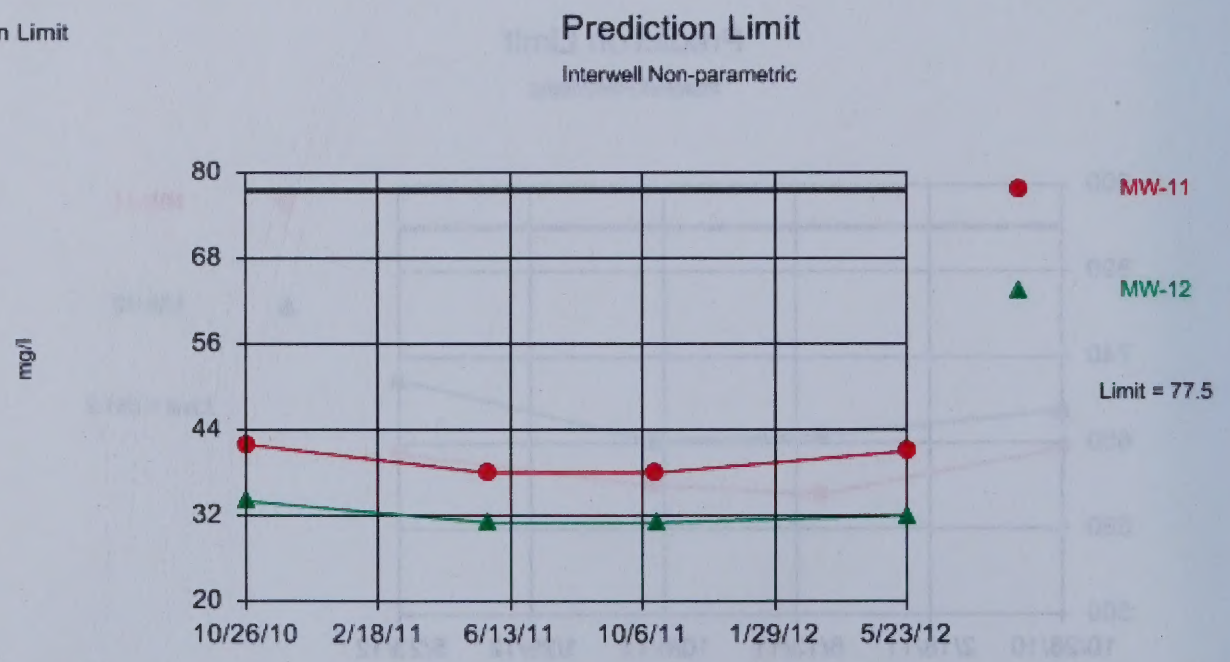


Background Data Summary: Mean=6.762, Std. Dev.=2.513, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.89, critical = 0.873. Report alpha = 0.05. Individual comparison alpha = 0.025. Most recent point for each compliance well compared to limit.

Figure F-4: Prediction Limit Analysis for Sulfate

v.9.0.34 For regulatory purposes only. EPA

Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 11 background values Report alpha = 0.1538. Individual comparison alpha = 0.08013. Most recent point for each compliance well compared to limit.

Figure F-5: Prediction Limit Analysis for Iron

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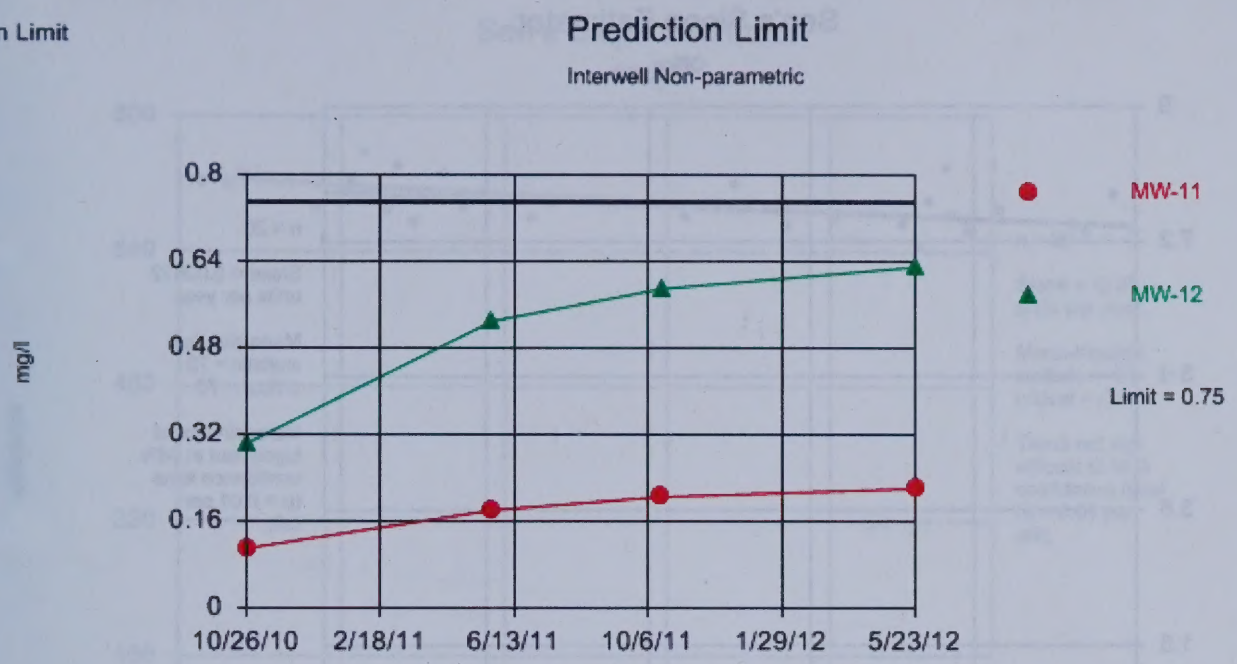
Within Limit



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 21 background values. 66.67% NDs Report alpha = 0.08696. Individual comparison alpha = 0.04447. Most recent point for each compliance well compared to limit.

Figure F-6: Trend Analysis for pH in MW-9R

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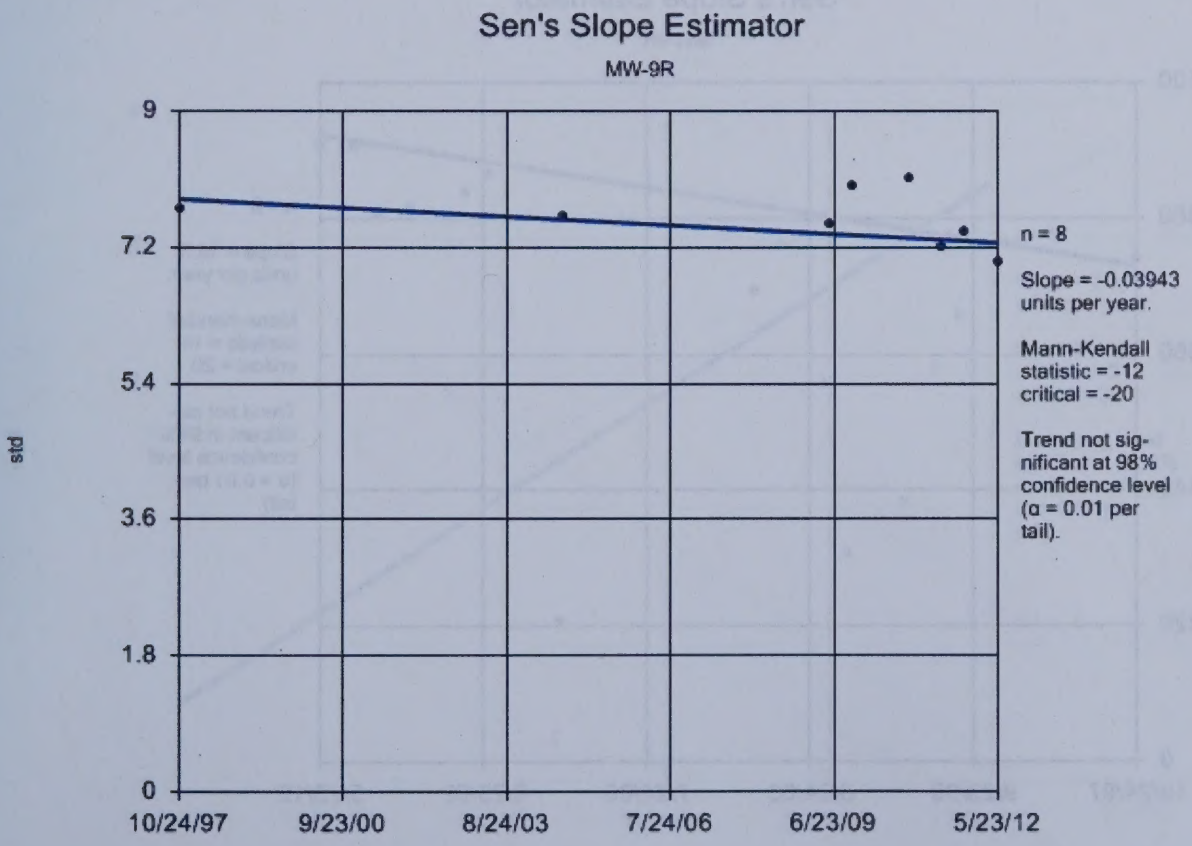

Figure F-7: Trend Analysis for pH in MW-OW

v.9.0.34 For regulatory purposes only. EPA

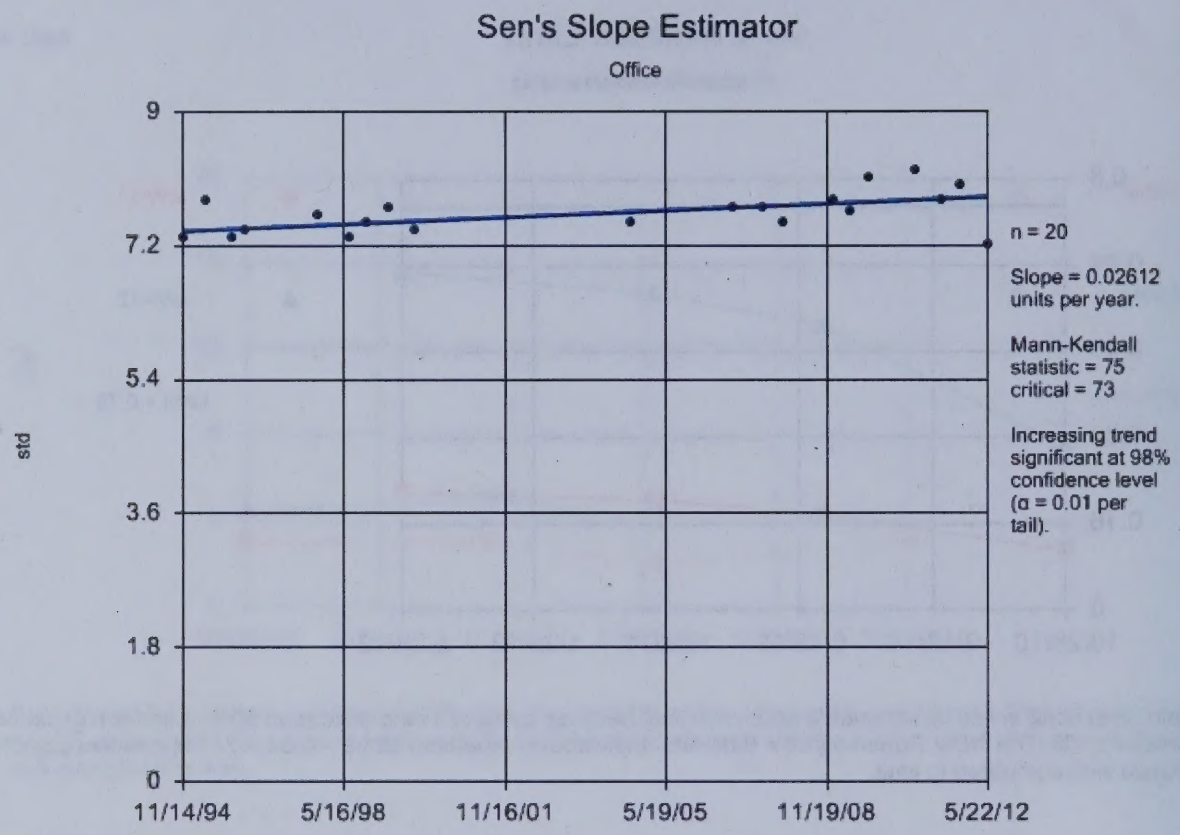

Figure F-8: Trend Analysis for Conductivity in MW-9R

v.9.0.34 For regulatory purposes only. EPA

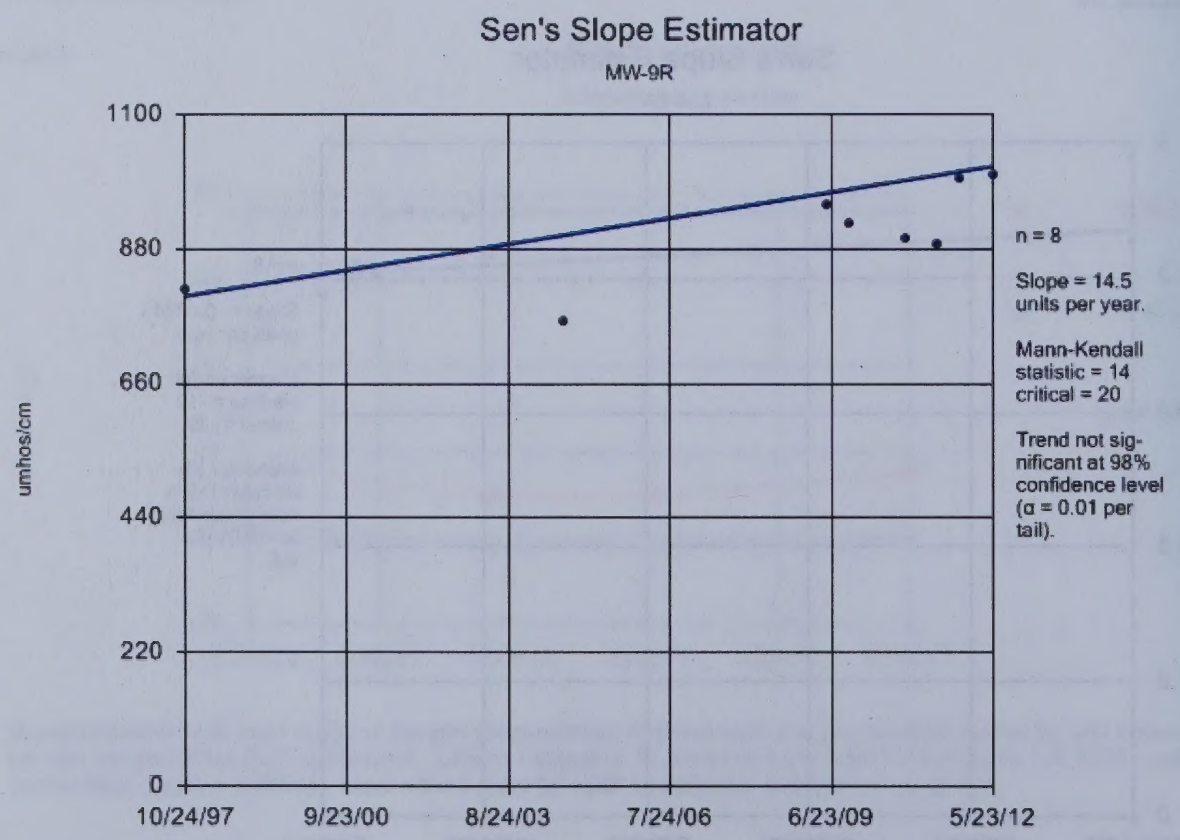

Figure F-9: Trend Analysis for Conductivity in MW-OW

v.9.0.34 For regulatory purposes only. EPA

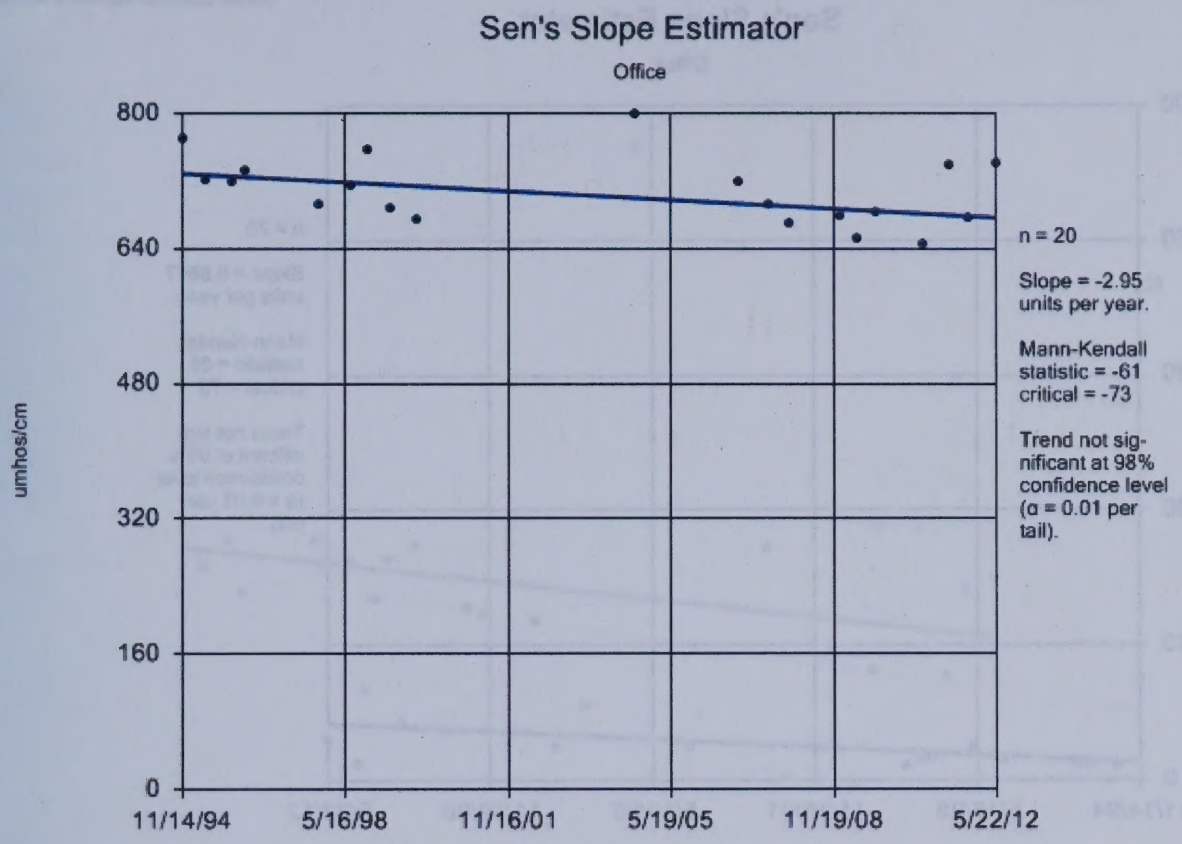

Figure F-10: Trend Analysis for Chloride in MW-9R

v.9.0.34 For regulatory purposes only. EPA

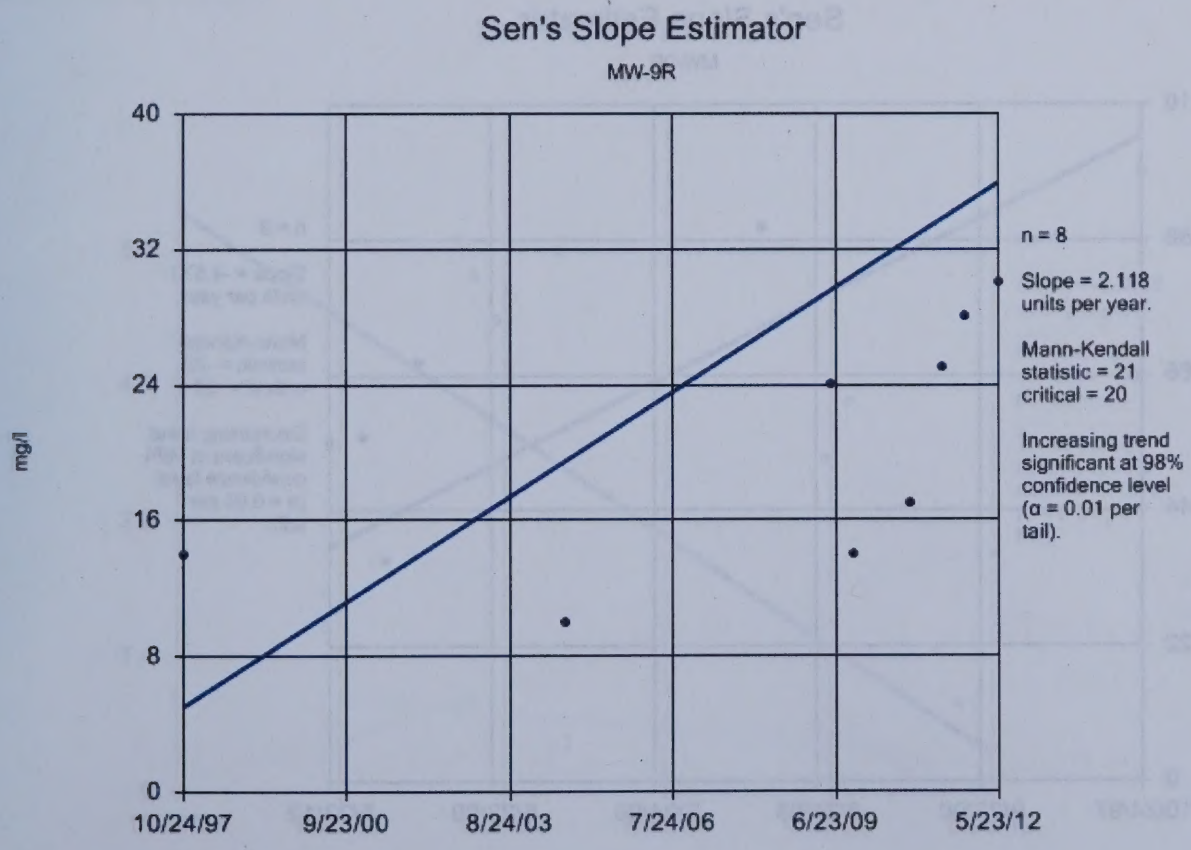

Figure F-11: Trend Analysis for Chloride in MW-OW

v.9.0.34 For regulatory purposes only. EPA

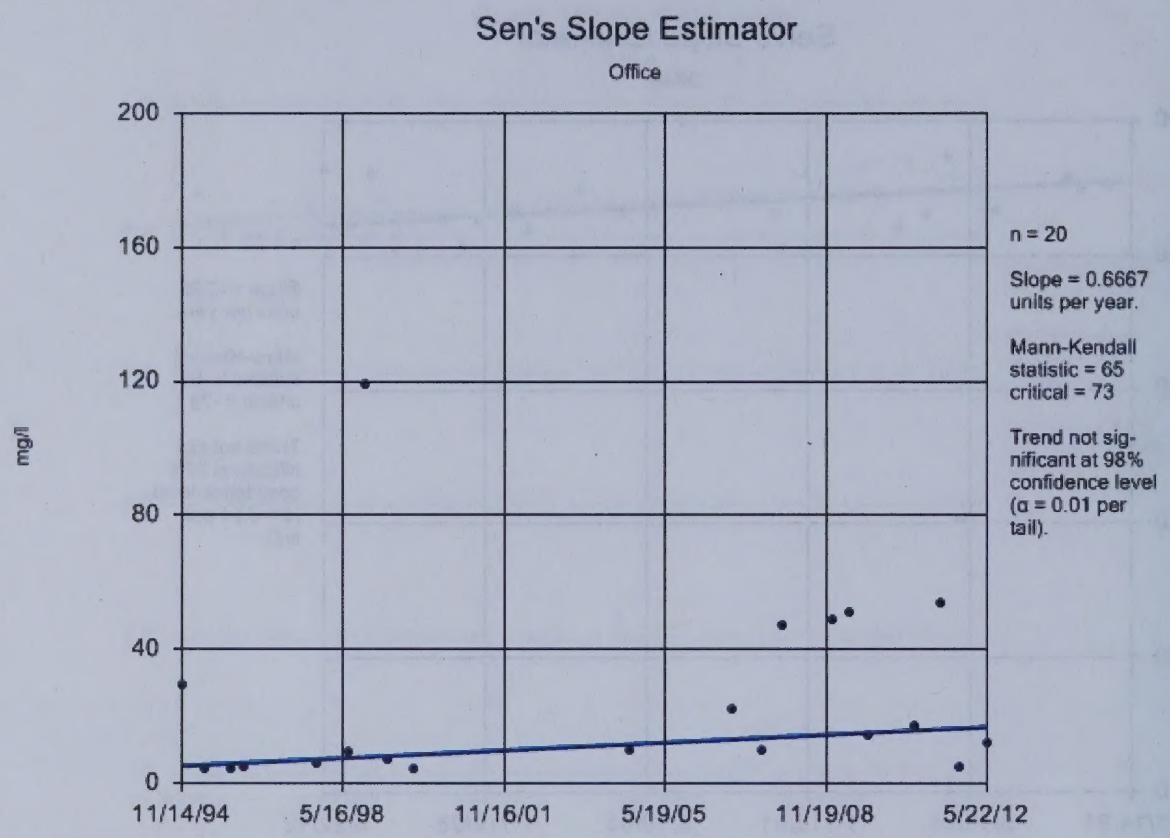

Figure F-12: Trend Analysis for Sulfate in MW-9R

v.9.0.34 For regulatory purposes only. EPA

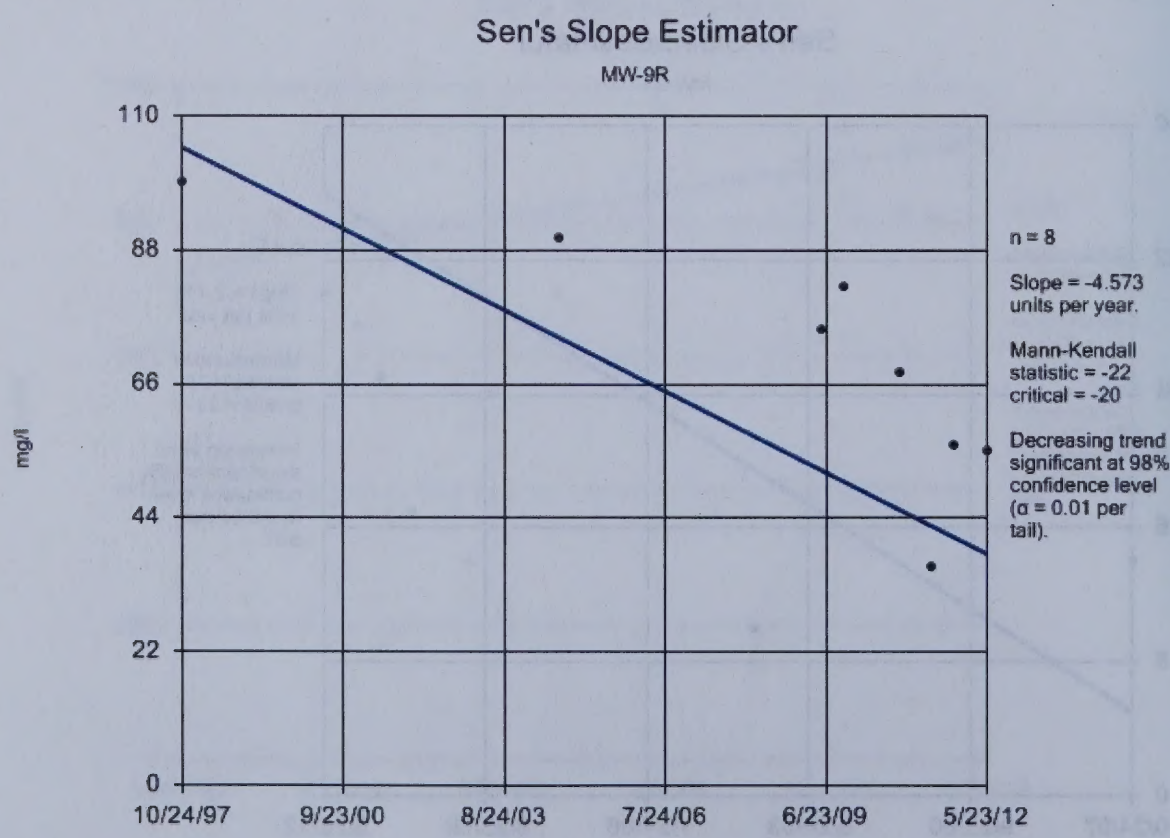

Figure F-13: Trend Analysis for Sulfate in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

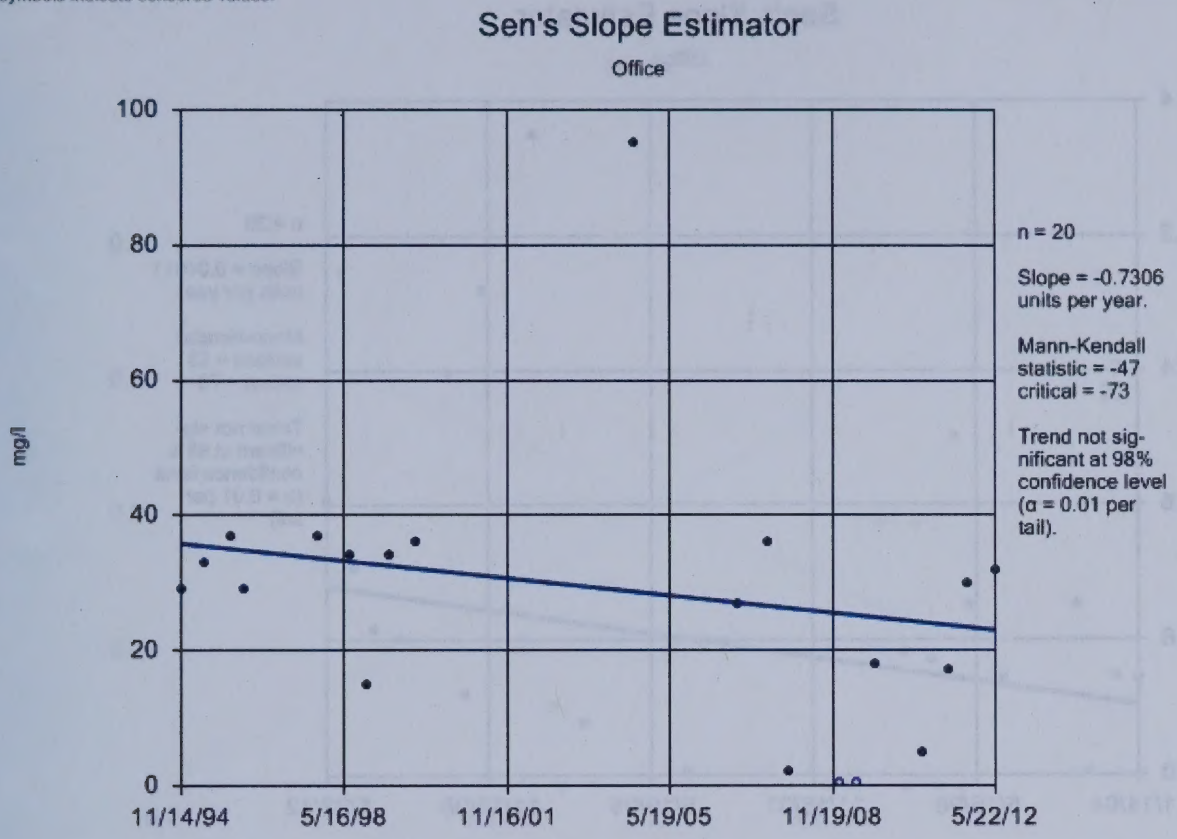

Figure F-14: Trend Analysis for Nitrate + Nitrite in MW-9R

v.9.0.34 For regulatory purposes only. EPA

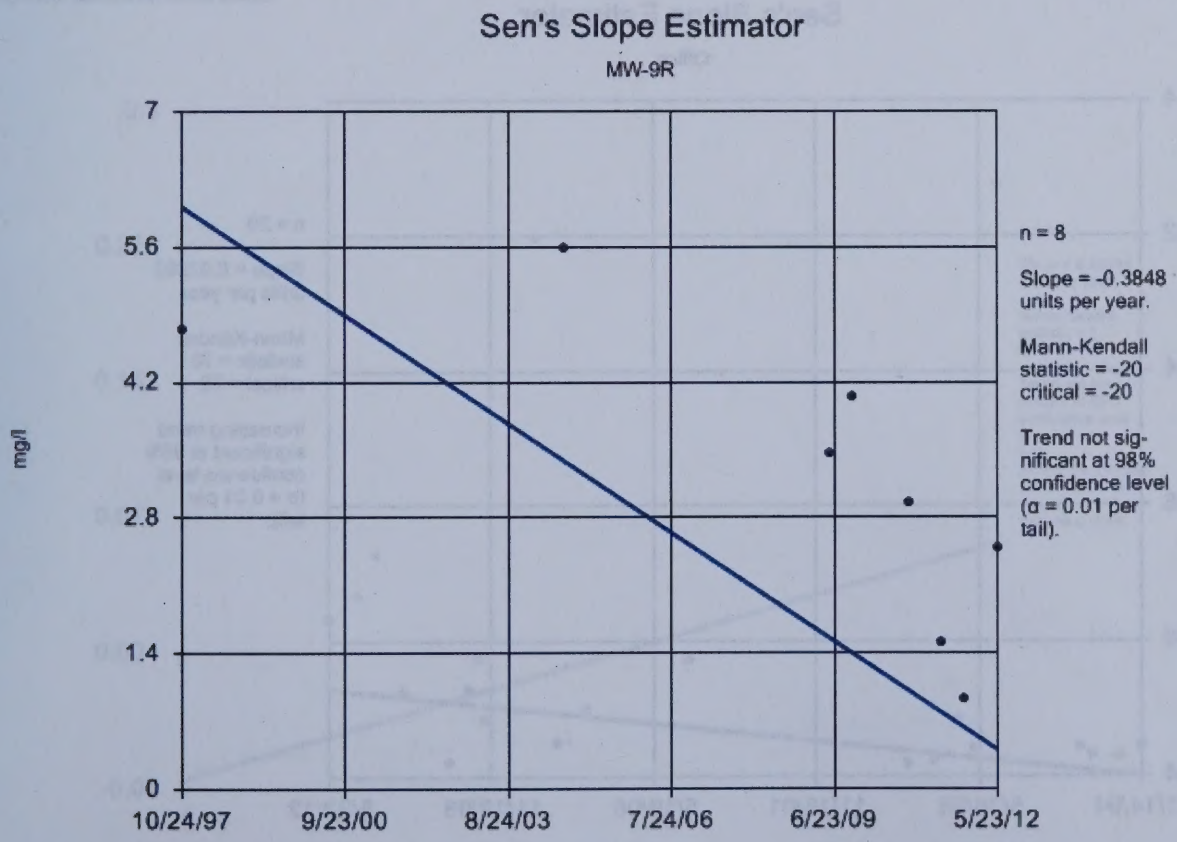

Figure F-15: Trend Analysis for Iron in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

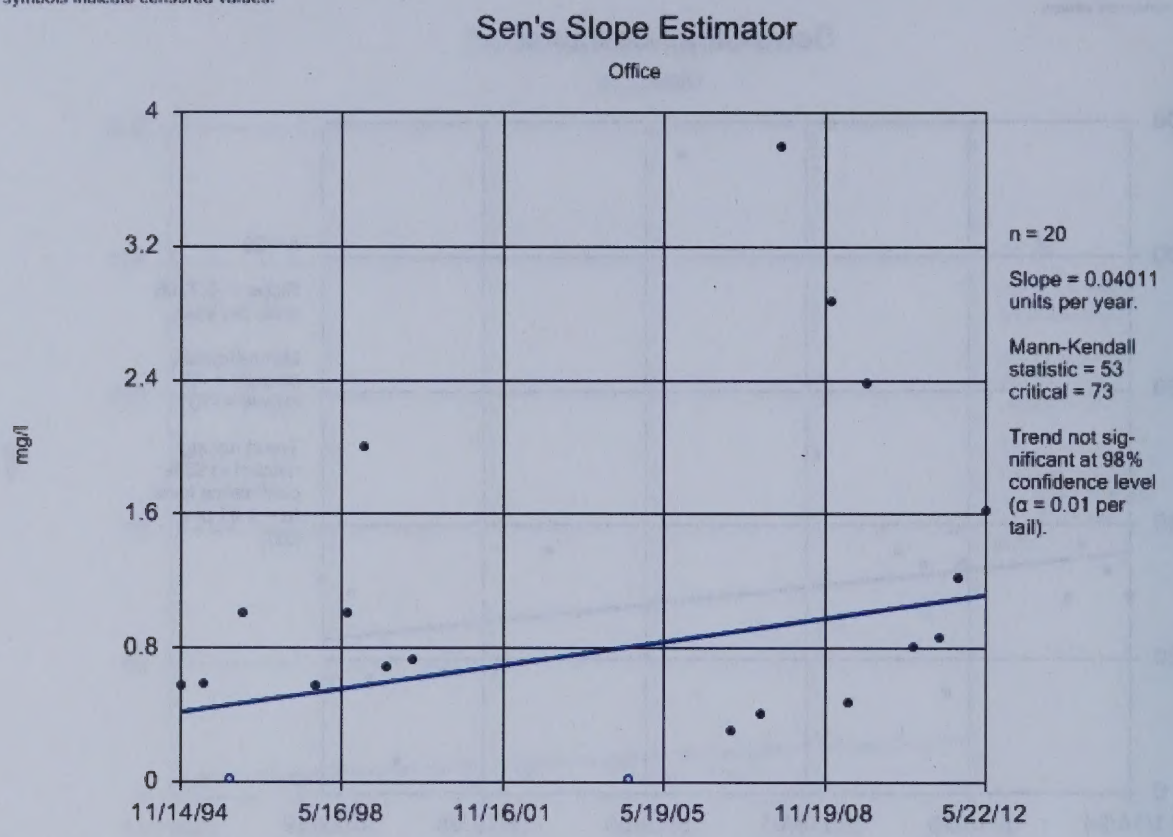

Figure F-16: Trend Analysis for Zinc in MW-OW

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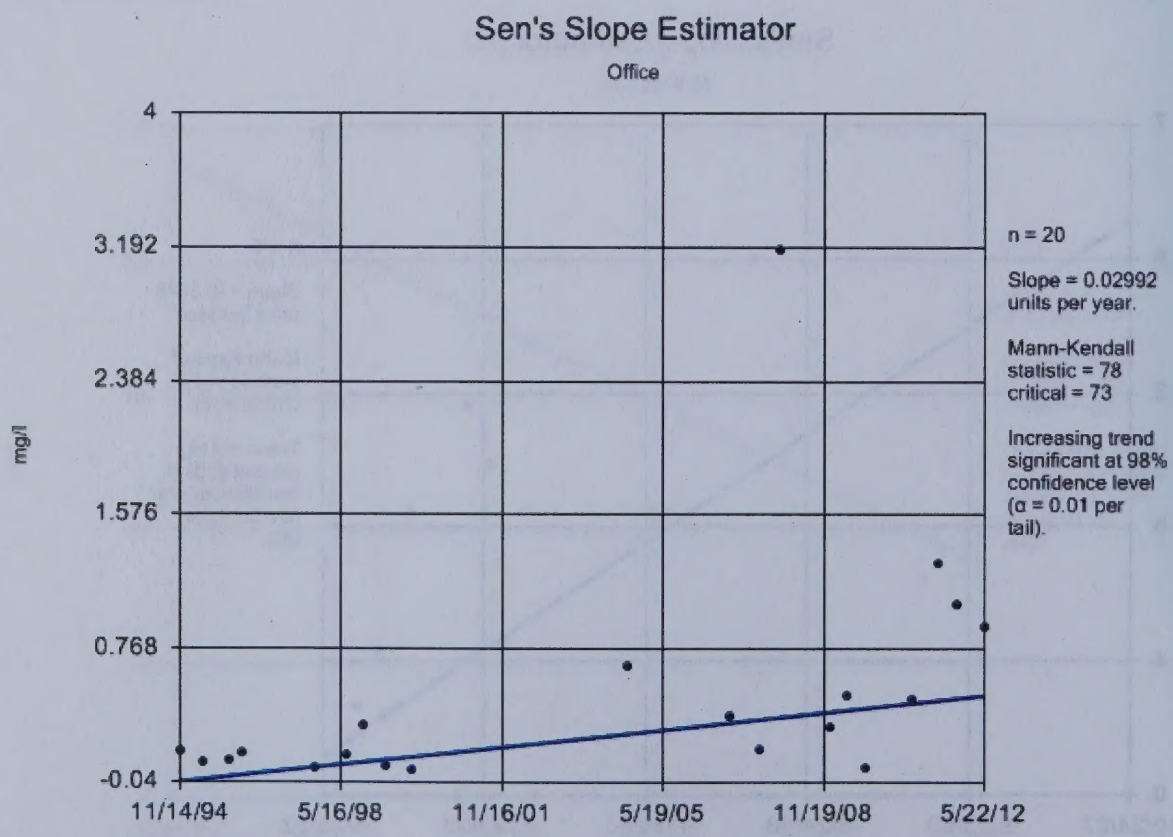


Figure F-17: Trend Analysis for Carbon disulfide in MW-9R

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

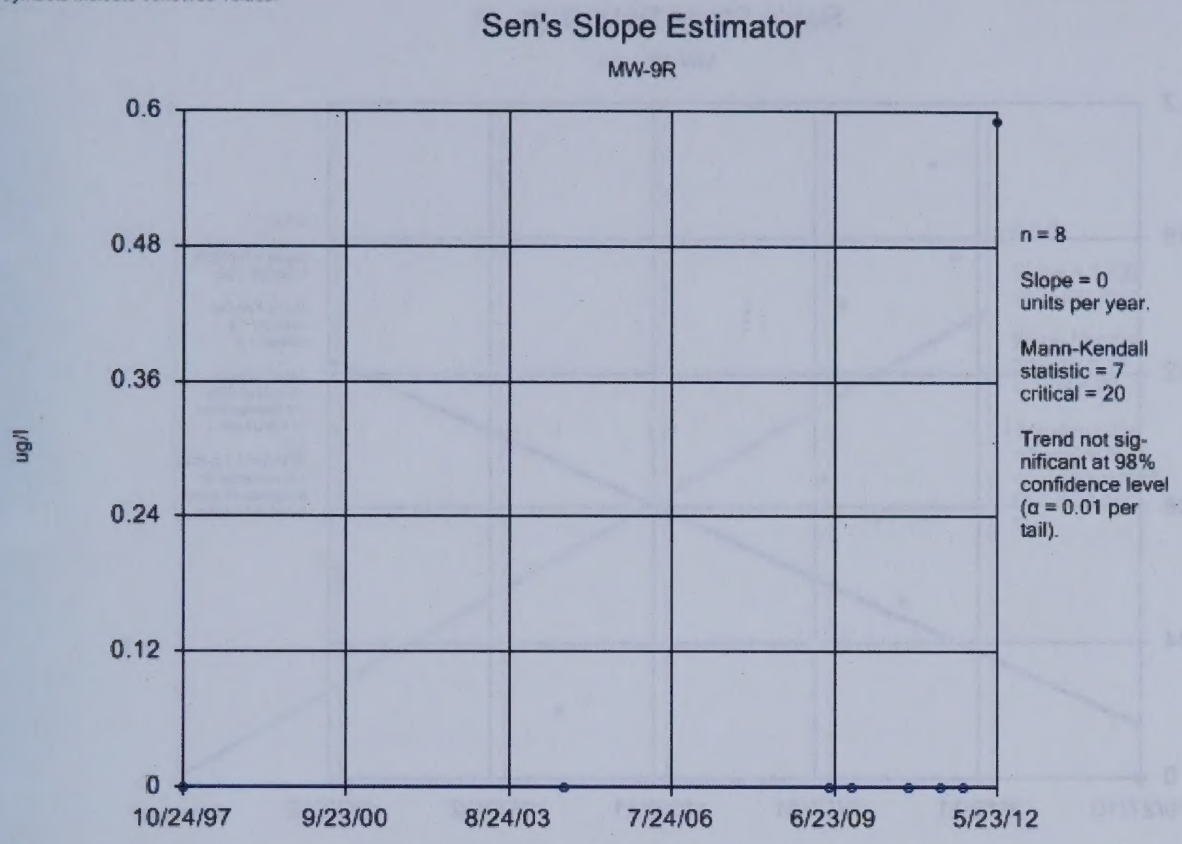


Figure F-18: Trend Analysis for Carbon disulfide in MW-11

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

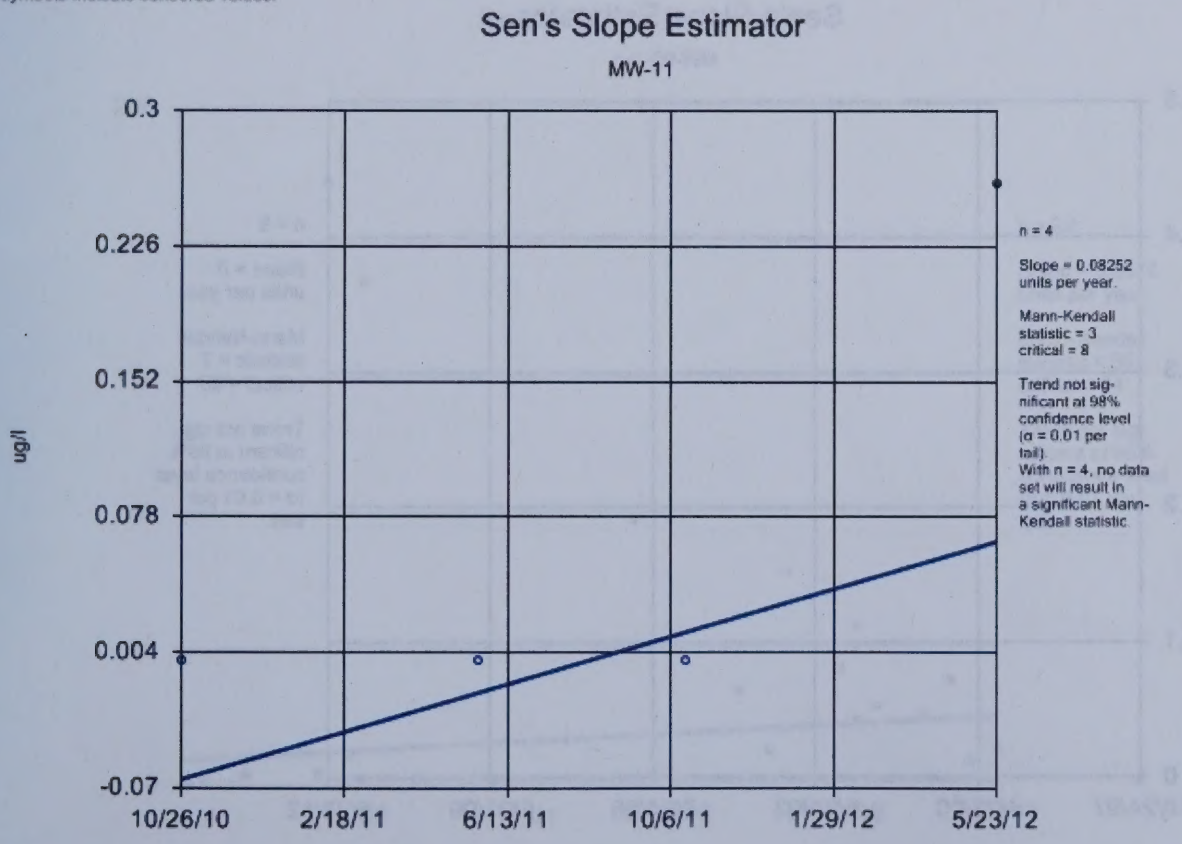


Figure F-19: Trend Analysis for Carbon disulfide in MW-12

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

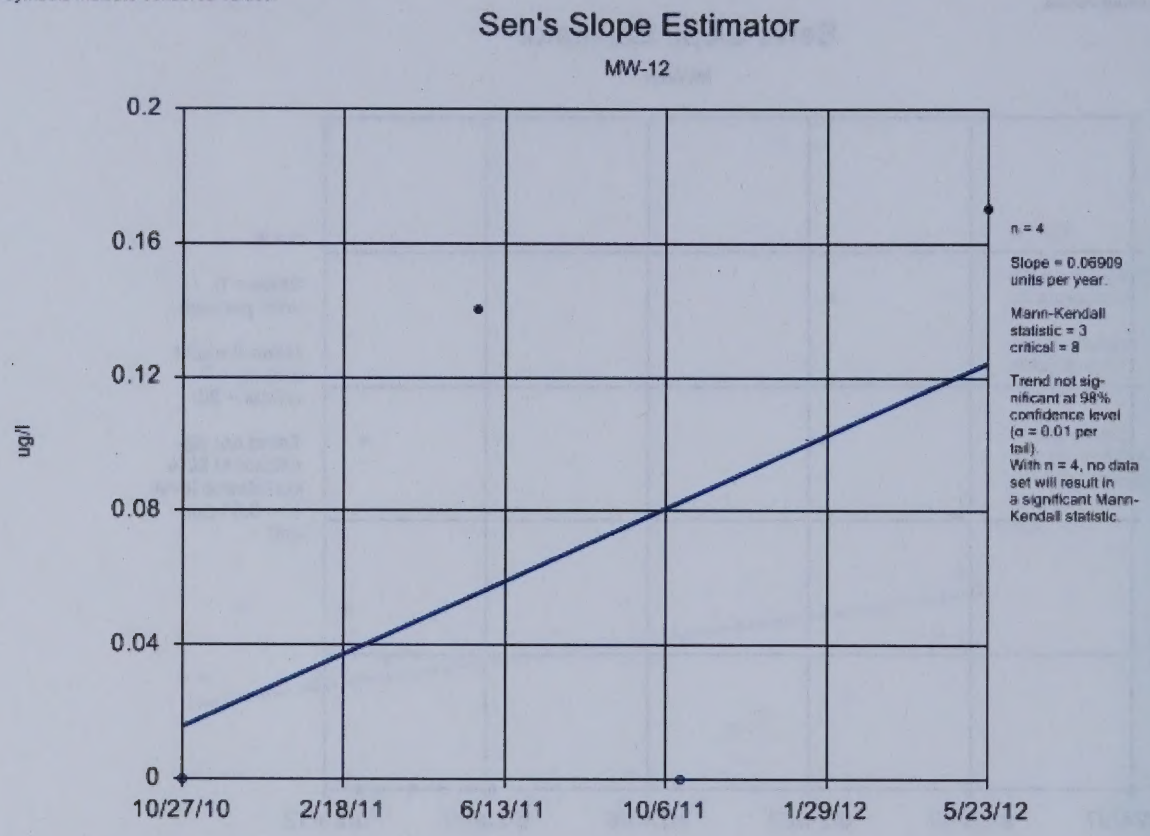


Figure F-20: Trend Analysis for 1,1-Dichloroethane in MW-9R

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

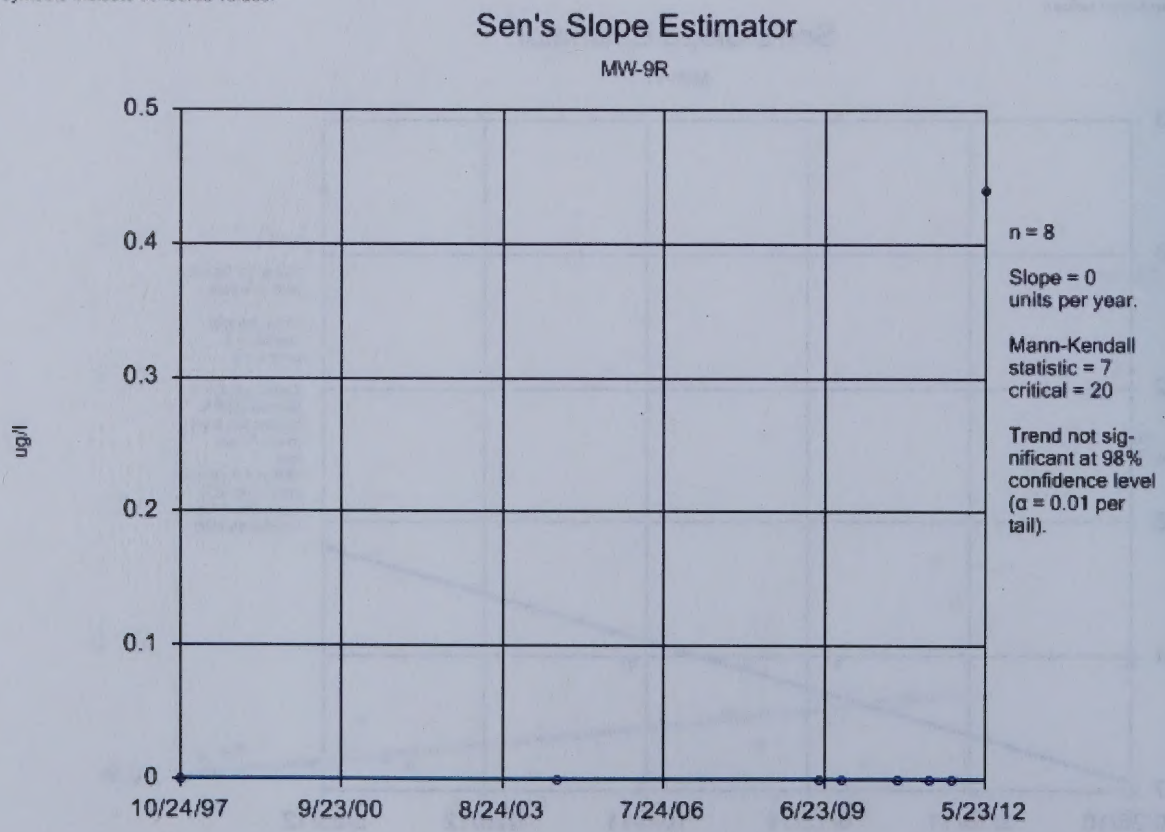


Figure F-21: Trend Analysis for cis-1,2-Dichloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA

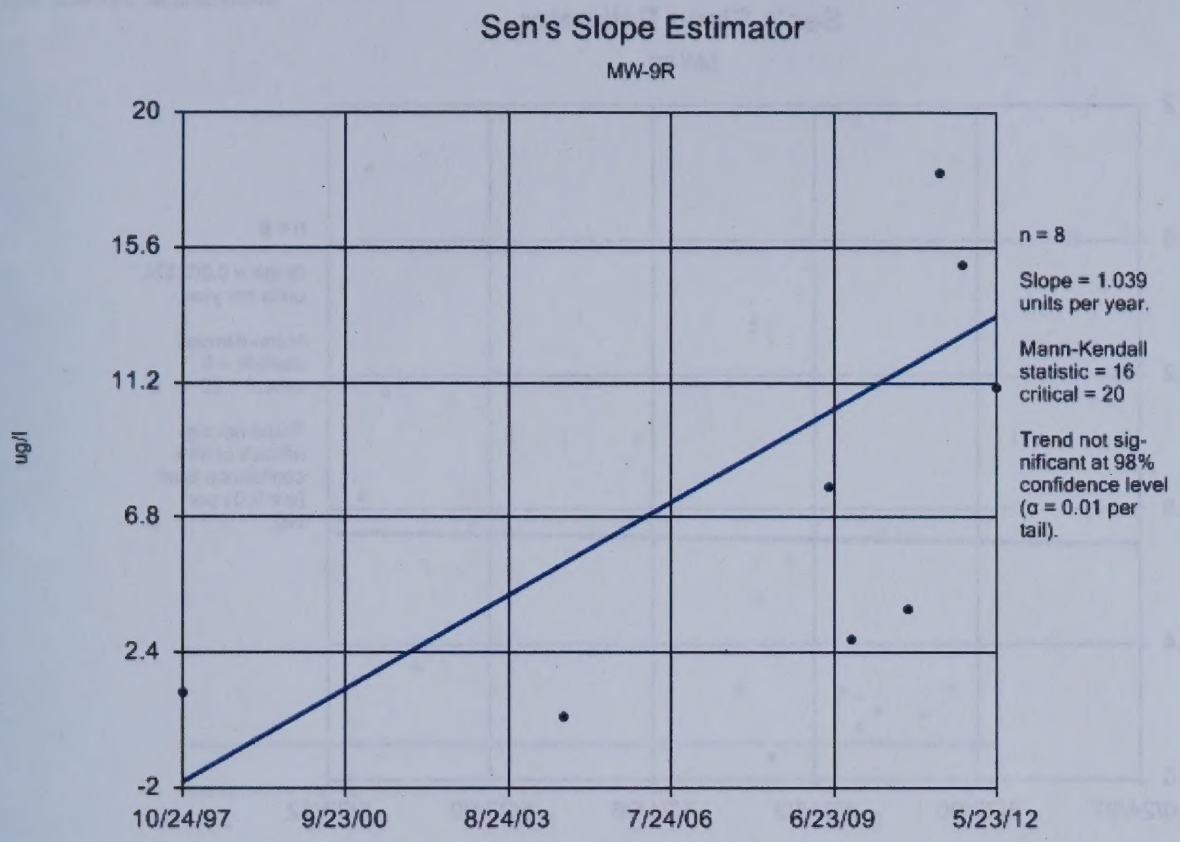


Figure F-22: Trend Analysis for cis-1,2-Dichloroethene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

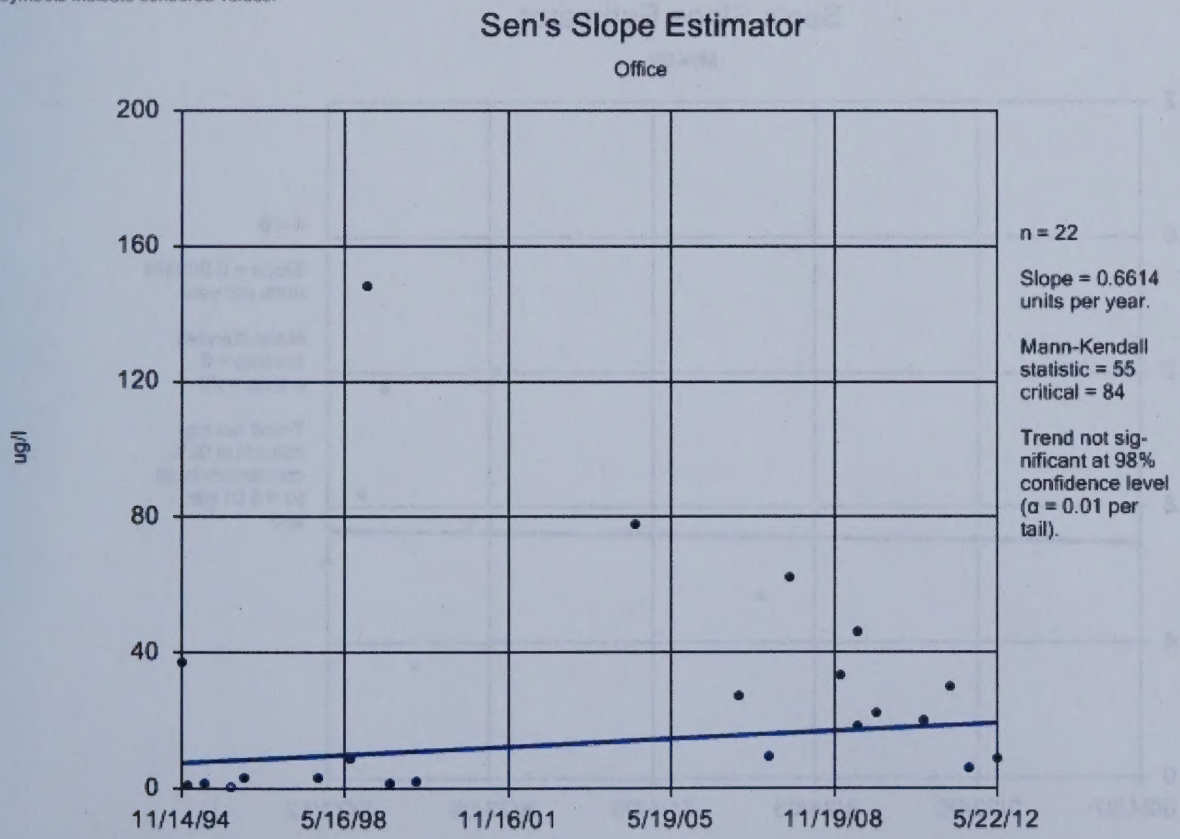


Figure F-23: Trend Analysis for Tetrachloroethene MW-9R

v.9.0.34 For regulatory purposes only. EPA

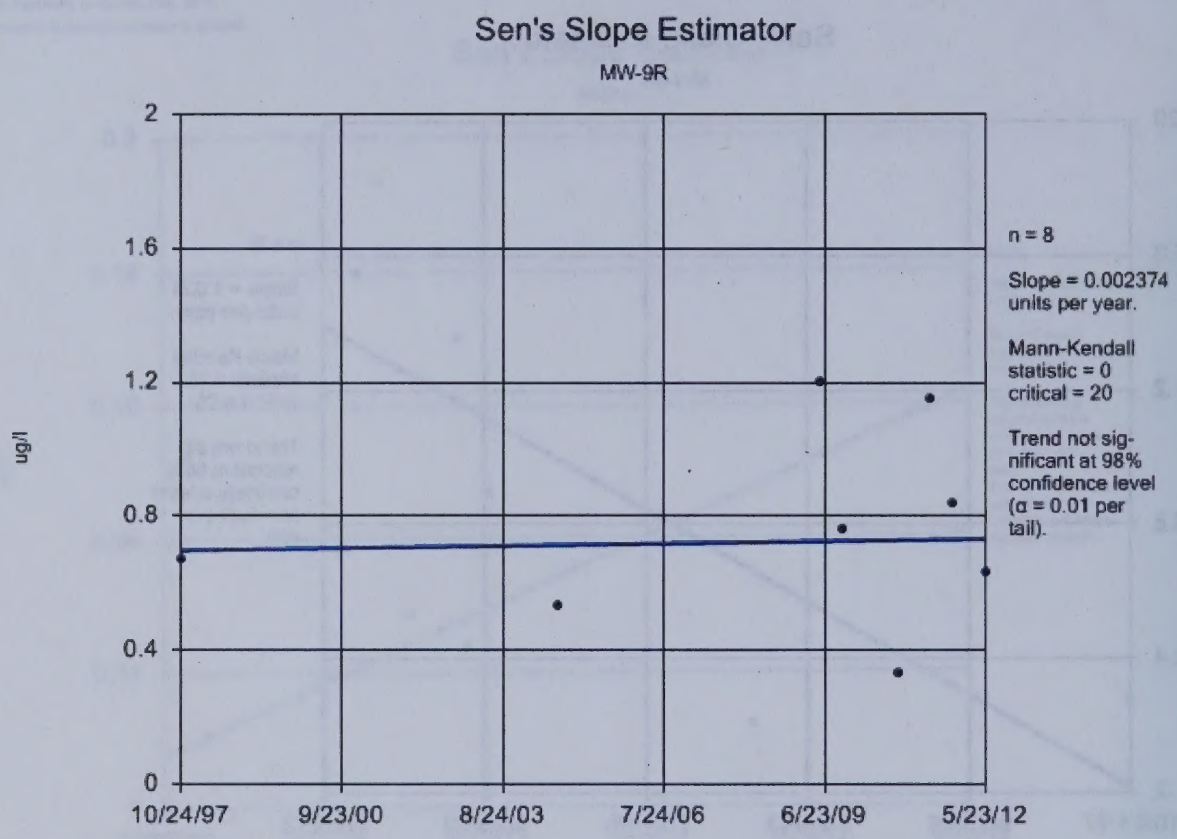


Figure F-24: Trend Analysis for Trichloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA

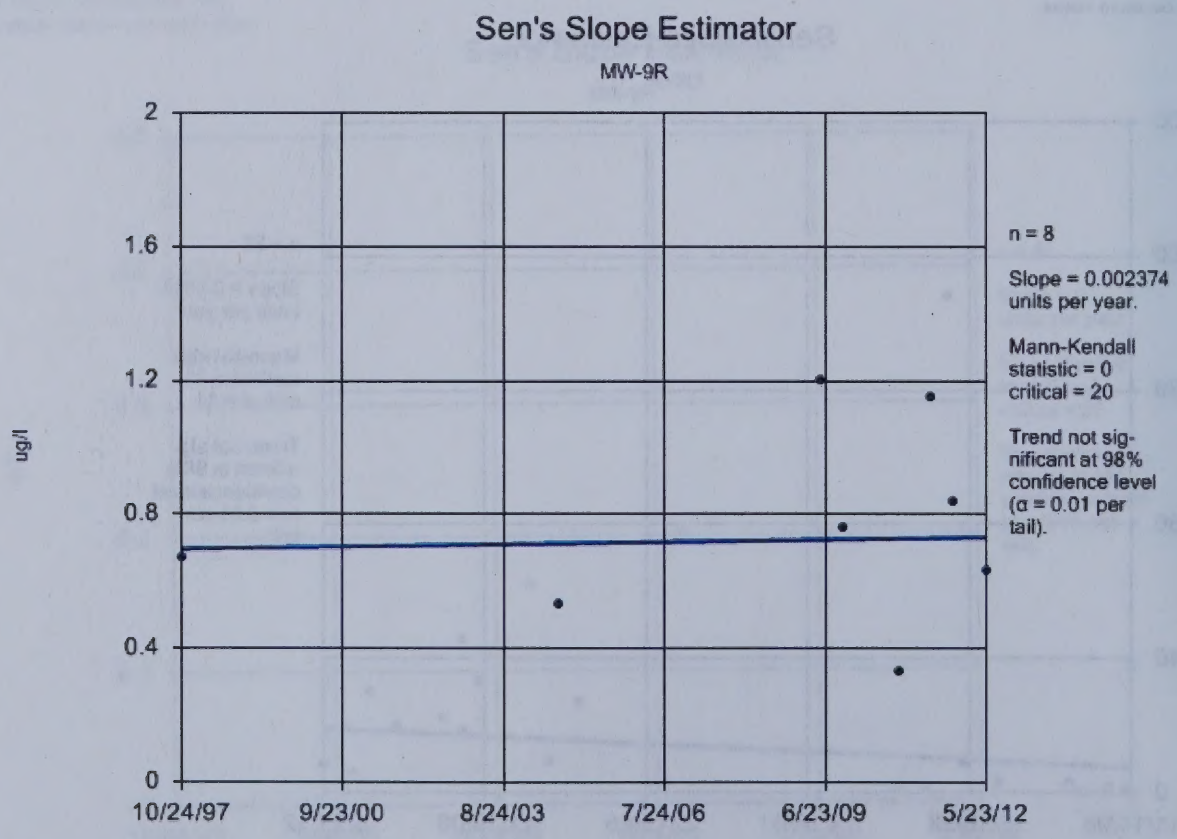
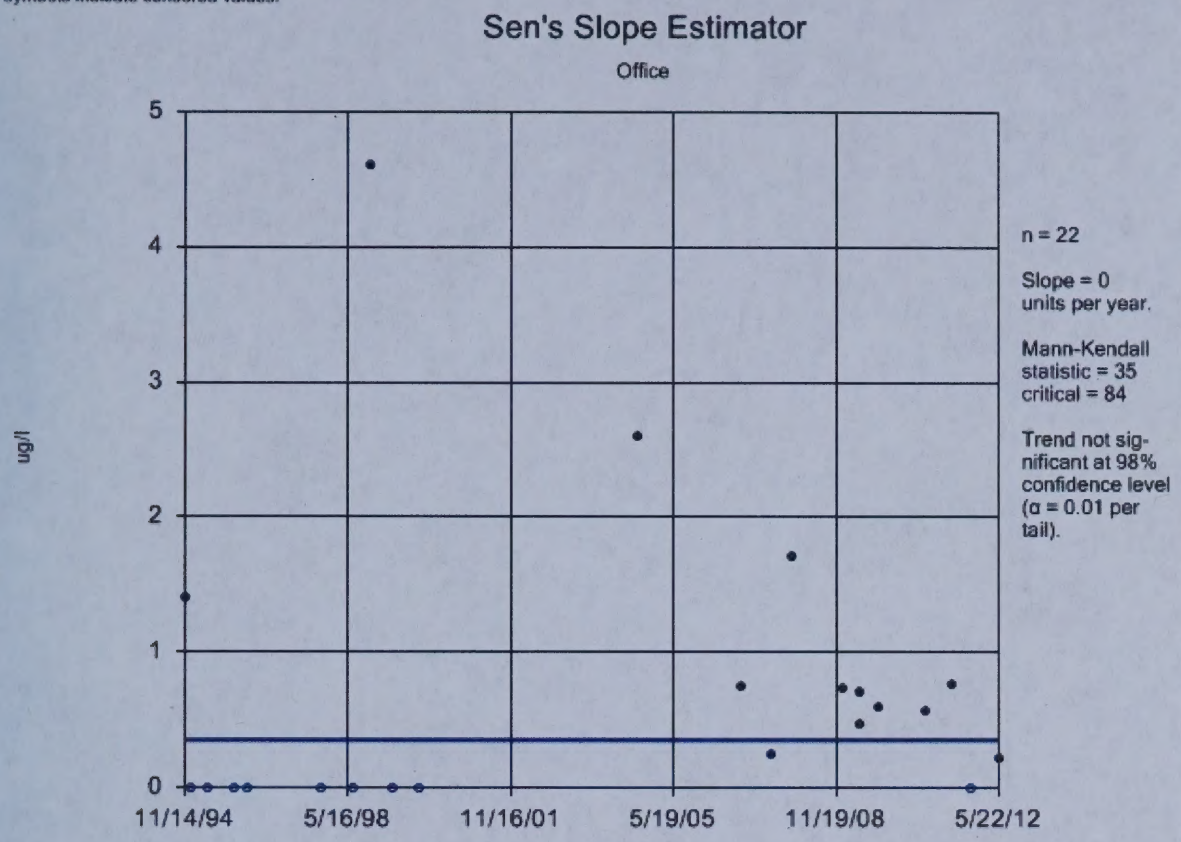


Figure F-25: Trend Analysis for Vinyl chloride MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.



Closed

County Fergus

Facility & # Mr. M #302

Closure	Landfarm
Finan Assur	Liner
GW Corr Meas	Methane
GW Monitoring	O & M
GW Reports	Run-on
Inspections	
Other:	

CLOSED MISTER M LANDFILL, LICENSE #302
LEWISTOWN, FERGUS COUNTY, MONTANA

OCTOBER 2011 GROUNDWATER MONITORING RESULTS AND STATISTICAL ANALYSES

Prepared By:

Montana Department of Environmental Quality

Solid Waste Section

November 28, 2011

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Groundwater monitoring at the closed Mister M Landfill, License #302, was conducted in May 2011 by the Montana Department of Environmental Quality (MDEQ), Solid Waste Section, according to the July 2011 Sampling and Analysis Plan for Methane and Groundwater (SAP) (MDEQ, 2011 [2]). The Mister M Landfill is located in Fergus County, Montana, approximately four miles east of Lewistown on US Highway 87, as shown in Figure 1. As shown in Figure 2, the landfill lies in a small south facing coulee which drains to Boyd Creek. The facility received Class II wastes from 1956 to 1998, and was granted interim closure status on December 5, 2000. The current owners, Marvin and Sandra Mintyala, operated the facility from 1974 until approximately 2000, when the site was abandoned.

According to the Geohydrologic Characterization (Gillespie, 1993 revised; and Gillespie, 1994) the landfill is underlain by the Kootenai Formation, which consists of predominately shale with some silty sandstone. A basal unit of sandstone in the Kootenai formation is the uppermost aquifer in the area. Minor amounts of water have been encountered in the upper portions of the Kootenai Formation but most of the monitoring wells completed in the upper Kootenai Formation at the site have frequently been dry or contained minimal volumes of water.

Previous groundwater sampling at the facility was conducted by the owners or their consultants from 1993-1999 (Gillespie, 1995 and 1996; Energy Laboratories, 1997, 1998 [1], and 1998 [2]; and Portage Environmental, 1999 and 2000). From 2003-2007 Tetra Tech, Inc was authorized by the MDEQ to conduct groundwater monitoring in the absence of action by the owners (Energy Laboratories, 2003, 2004, 2005, 2006, and 2007; Maxim, 2005; Tetra Tech, 2006 and 2008). MDEQ Solid Waste Section personnel have conducted groundwater monitoring from January 2009 to the present (MDEQ, 2009 [1]; 2009 [2]; 2010 [1]; 2010 [2], 2011 [1]).

2.0 FIELD PROCEDURES

MDEQ Solid Waste Section personnel conducted monitoring activities on October 17 and 18, 2011 including monitoring well inspections, static water level (SWL) measurements, and groundwater sample collection as part of the assessment monitoring program currently in effect for the facility. The locations of the monitoring points and the activities that were performed at each point are shown in Figure 3. Copies of the field notes are included in Appendix A. All field activities described in this report were conducted in accordance with the approved July 2011 SAP, and any deviations from the SAP are described herein. The analysis of groundwater samples was conducted by Energy Laboratories Inc, in Helena, Montana.

2.1 WELL INSPECTIONS

The monitoring wells currently in use were inspected on October 17, 2011. MW-OW does not have an external casing and the new locking cap installed in April 2009 is already showing significant weather wear. All other monitoring wells are in good condition.

2.2 WATER LEVEL MEASUREMENTS

Static water levels were measured on October 17, 2011 in wells MW-5, MW-6, MW-9R, MW-11, MW-12, and MW-OW using an electric water level meter. The total depths of wells MW-9R, MW-11, and MW-12 were also recorded.

2.3 GROUNDWATER SAMPLING

Groundwater samples were collected October 17 and 18, 2011 from wells MW-9R, MW-11, MW-12, MW-HW, and MW-OW. A field duplicate was collected from well MW-11. At each well that was sampled, samples were collected for all of the parameters listed in the SAP.

The wells were purged and sampled following the procedures in the SAP with the deviations described below. Copies of the Monitoring Well Purging and Sampling Forms for each well are included in Appendix A. All of the wells were purged and sampled using disposable bailers.

Well MW-12 was flowing at the time of sampling, thus the total volume purged consisted of the volume of water bailed from the well plus the estimated volume which flowed from the well during the bailing process. Field water quality measurements were made using a rented YSI model 556-02 water quality meter, which was calibrated by TRS Environmental prior to shipment.

After collection, the samples were labeled as described in the SAP and were stored on ice in a laboratory supplied cooler. The samples were stored according to chain-of-custody requirements and hand delivered to Energy Laboratories Inc in Helena, Montana on October 19, 2011.

3.0 Monitoring Results

3.1 Groundwater Levels and Flow

The water levels in October 2011 ranged from 23.54 feet lower to 3.10 feet higher than the June 2011 measurements, and 0.64 feet lower to 7.13 feet higher than the October 2010 measurements. All of the monitoring wells at the site have shown a consistent trend of higher water levels in the spring and lower in the fall, due to seasonal precipitation and snowmelt, except for well MW-11 where the water level has risen for all three measurements since installation of the well in October 2010. The reason for this difference in MW-11 is unknown. Figure 4 displays the October 2011 static water levels on a map. No attempt was made to contour the static water levels as the shallow wells are completed in minor water bearing zones of unknown horizontal extent and connectivity, and the water level measurements made in the deep water bearing zone are from wells that have not yet been surveyed. Groundwater flow in the shallow water bearing zones likely follows local topography and flows in a south to southwest direction. Groundwater flow in the deep water bearing zone is assumed to be to the southwest based on records from domestic wells in the area. Copies of the Water Level Measurement Forms are included in Appendix A. Tables containing historic water levels and hydrographs for both the shallow and deep water bearing zones are included in Appendix B.

3.2 Data Validation

Upon receipt from the laboratory, the analytical results were validated as described in the SAP to ensure that the data quality objectives had been met. The samples were received by the laboratory at a temperature of 2.4°C. The pH of all samples was within acceptable limits. All samples were analyzed within the required holding times. The relative percent difference for all field and laboratory duplicates were within control limits. All laboratory control samples and blanks were acceptable, with the exception of 1,2-Dichloropropane in the continuing calibration verification standard and Bromomethane in a sample matrix spike. Because these parameters were not detected in any samples, no flagging is necessary. No VOCs were detected in the Trip Blank. A copy of the laboratory QA/QC report is included in Appendix C.

3.3 Groundwater Analytical Results

The following sections discuss the analytical results grouped by analyte type. A copy of the laboratory analytical report is included in Appendix D. Historical concentration plots for all parameters detected during this sampling event and a table containing historical analytical results are included in Appendix E.

3.3.1 Indicator Parameters

Groundwater at the facility has a neutral to slightly alkaline pH, with values from 7.4 to 8.0 reported for this event. Specific conductance ranged from 620 μmhos/cm in the sample from MW-11 to 994 μmhos/cm in MW-9R. Sulfate and Chloride were similar to previous events in MW-9R, MW-11, and MW-12. The concentration of Sulfate (30 mg/L) increased in MW-OW while the concentration of Chloride (5 mg/L) decreased. Both of these concentrations are near to historic levels, and similar to the concentrations observed in MW-HW. Sulfate (56 mg/L) and Chloride (28 mg/L) both increased in MW-9R. The concentration of Chloride is the highest recorded at this well, while the concentration of Sulfate is the second lowest. Nitrate + Nitrite was not detected in MW-11 and MW-OW. Nitrate + Nitrite was detected at very low concentrations (0.01 and 0.03 mg/L) in MW-HW and MW-12. This was the first detection at MW-12, however the concentrations are lower than the previous detection limit of 0.05 mg/L thus may represent typical concentrations. Nitrate + Nitrite has been detected previously in MW-HW at low concentrations. Nitrate + Nitrite was also detected at a concentration of 0.93 mg/L in MW-9R and its duplicate, well below the maximum contaminant level (MCL) of 10 mg/L and lower than previous values at MW-9R. These values are also less than those observed in the background well MW-5 in previous sampling events and in other shallow wells.

3.3.2 Dissolved Metals

Two metals were detected in facility wells during this sampling event. Iron was detected in MW-11, MW-11 duplicate, MW-12, and MW-OW at 0.22, 0.19, 0.59, and 1.22 mg/L respectively, and showed small increases from the May 2011 sample results. The values for MW-11 and MW-12 are typical for deeper aquifer wells, and the value for MW-OW is only slightly higher than typical deeper aquifer values. The concentrations in MW-12 and MW-OW

are greater than the secondary MCL for Iron of 0.3 mg/L. Zinc was detected in MW-OW at 1.03 mg/L and in MW-HW at 0.02 mg/L. The concentration of Zinc at MW-HW is typical for that well. The zinc concentration in MW-OW was the third highest on record for the facility.

3.3.3 Volatile Organic Compounds

Three VOCs were detected in MW-OW during this sampling event, compared with 11 in May 2011. Two of these compounds (concentrations in µg/L), Styrene (0.40 J) and cis-1,2-Dichloroethene (5.7) have been routinely detected in MW-OW, but greatly decreased in concentration from the May 2011 sampling. The remaining compound, Carbon disulfide (1.2) has been detected infrequently in previous samples from the facility, but is also considered a common laboratory contaminant thus may not represent true groundwater conditions. Four VOCs were detected in MW-9R: Tetrachloroethene (0.84 J), Trichloroethene (0.45 J) cis-1,2-Dichloroethene (15), and Dichlorodifluoromethane (0.40 J). All of these compounds have been detected previously in MW-9R, and with the exception of Trichloroethene which remained approximately the same, the concentrations decreased slightly compared to the May 2011 sampling event. No VOCs were detected in MW-11, MW-12, or MW-HW. VOC's have not been typically detected in MW-11 and MW-HW, however cis-1,2-Dichloroethene had been detected at low concentrations in MW-12 during the October 2010 and May 2011 sampling events.

4.0 STATISTICAL ANALYSIS

4.1 STATISTICAL METHODS

The statistical analyses were performed using the statistical software package Sanitas v.9.0.34. The validated analytical data was first screened to determine which parameters required statistical analysis. Only parameters which were detected in one or more compliance wells (MW-11 and MW-12) and had been historically detected at least once in the background well (MW-HW) were analyzed using an interwell prediction limit. If a parameter was detected in a compliance well, but was always non-detected in the background dataset, the background value was set as the detection limit and any detection of that parameter was considered a statistical exceedance of background. As a result of the screening described above, the parameters selected for statistical analysis were: pH, SC, Chloride, Sulfate, Nitrate + Nitrite, and Iron.

Each selected parameter was compared to the background dataset using an inter-well prediction interval analysis. The Sanitas software determines the distribution of the background dataset and performs the appropriate statistical test for that distribution. If the prediction interval analysis indicated an exceedance of background levels, a Sen's Slope/Mann Kendall test was conducted to analyze any trends in the data. All of the statistical tests were performed at a 95% site-wide confidence level, or the maximum confidence level that was possible given the size of the background dataset if a 95% confidence level was not possible.

A Sen's Slope/Mann Kendall test was also conducted on all parameters detected in the assessment monitoring wells (MW-9R and MW-OW) to analyze any trends in the data.

4.2 ANALYSIS RESULTS

Table 1 contains a summary of the results of the statistical analyses. The full results of the statistical analyses are included in Appendix F. Due to the small size of the background dataset the site-wide confidence levels for non-parametric tests were less than 95%. The tests for Sulfate, Nitrate + Nitrite, and Iron had a site-wide confidence level of 90.91%.

The values from the current sampling event for all parameters in compliance wells MW-11 and MW-12 were within prediction limits.

Trend analyses for well MW-9R indicated no significant trends for any detected parameters. A significant increasing trend was noted for pH at well MW-OW. A review of pH data indicates the trend in pH at MW-OW is similar to that at the background well, MW-HW, indicating a natural cause is likely for this trend. A significant decreasing trend was also noted for SC in MW-OW. This trend does not appear to be notable on the historical trend graph, but could indicate a slow improvement in water quality at this well.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Groundwater monitoring was conducted by the MDEQ at the Mister M Landfill on October 17 and 18, 2011. Water levels were measured in six wells, and groundwater samples were collected from five wells. All currently used wells were inspected.

The static water levels measured during the October 2011 event decreased on average from the May 2011 event. These seasonal variations in water level are evidence that a relatively direct connection may exist between the surface and groundwater. Water levels will continue to be monitored semi-annually in the future to provide additional data on water level trends.

Four VOCs were detected in MW-9R at slightly lower levels that the May 2011 sampling event. The contaminants present in MW-9R are different than those seen in MW-OW indicating that the contamination may be from a different source or MW-9R may be closer to the source area than MW-OW; however the precise source of these VOCs is unknown. Additional data is needed to evaluate the contamination in that well. Well MW-9R will continue to be sampled in future events for Inorganics and VOCs. MW-HW was sampled during this event. Additional background data from this well will be useful for evaluating the results from the other deep wells. MW-HW will continue to be sampled on a regular basis to increase the background dataset size for the compliance wells. Well MW-OW continues to show both inorganic and organic contamination. Sulfate and Chloride have returned to near normal levels. Zinc and Iron concentrations are variable but remain above normal levels. These metals are possibly the result of previous down-hole equipment associated with the use of MW-OW as a water supply well and not due to landfill leachate. VOCs continue to be detected in MW-OW at generally low levels, but the number of VOCs detected and the concentrations measured during the October 2011 sampling event were much lower than recent sampling events. MW-OW will continue to be sampled to track concentration trends. The new monitoring wells continue to show general chemistry similar to the other deep wells indicating that they are completed in the same deeper aquifer.

The analytical results from compliance wells MW-11 and MW-12 show no impacts from landfill leachate. The one VOC, cis-1,2-Dichloroethene, which was previously detected at a very low level in MW-12 was not detected during this sampling event. All parameters in the compliance wells were below background levels during this sampling event. According to ARM 17.50.1307(5) the facility may return to detection monitoring if the concentrations of all parameters remain below background levels for two consecutive sampling events. MW-11 and MW-12 will continue to be sampled as the point of compliance wells for the facility. The next groundwater sampling event will be conducted in May 2012.

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TABLES

Table 1: Summary of Results of Statistical Analyses

		Prediction Interval Analysis					Trend Analysis	
Parameter	Well	Distribution	Confidence Level (%)	Prediction Limit(s)	Result	Exceeds Limit?	Slope (per yr)	Significant ?
pH	MW-9R	N/A	N/A	N/A	7.4	N/A	-0.021	No
	MW-11	normal	95	6.91-8.08	8.0	No	N/A	N/A
	MW-12	normal	95	6.91-8.08	7.7	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	8.0	N/A	+0.032	Yes
SC	MW-9R	N/A	N/A	N/A	994	N/A	+11.88	No
	MW-11	normal	95	860.9	621.5	No	N/A	N/A
	MW-12	normal	95	860.9	663	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	676	N/A	-3.555	Yes
Chloride	MW-9R	N/A	N/A	N/A	28	N/A	+1.132	No
	MW-11	normal	95	12.2	2	No	N/A	N/A
	MW-12	normal	95	12.2	4	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	5	N/A	+0.827	No
Sulfate	MW-9R	N/A	N/A	N/A	56	N/A	-4.637	No
	MW-11	non-normal	90.91	107	38	No	N/A	N/A
	MW-12	non-normal	90.91	107	31	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	30	N/A	-0.930	No
Nitrate+Nitrite	MW-9R	N/A	N/A	N/A	0.93	N/A	-0.441	No
	MW-11	non-normal	90.91	0.44	ND	No	N/A	N/A
	MW-12	non-normal	90.91	0.44	0.03	No	N/A	N/A
Iron	MW-11	non-normal	90.91	0.75	0.205	No	N/A	N/A
	MW-12	non-normal	90.91	0.75	0.59	No	N/A	N/A
	MW-OW	N/A	N/A	N/A	1.22	N/A	+0.034	No
Zinc	MW-OW	N/A	N/A	N/A	1.03	N/A	+0.025	No
Carbon disulfide	MW-OW	N/A	N/A	N/A	1.2	N/A	0	No
Dichlorodifluoromethane	MW-9R	N/A	N/A	N/A	0.40 J	N/A	+0.015	No
cis-1,2-Dichloroethene	MW-9R	N/A	N/A	N/A	15	N/A	+1.003	No
	MW-OW	N/A	N/A	N/A	5.7	N/A	+1.130	No
Styrene	MW-OW	N/A	N/A	N/A	0.40 J	N/A	+0.021	No
Tetrachloroethene	MW-9R	N/A	N/A	N/A	0.84 J	N/A	+0.012	No
Trichloroethene	MW-9R	N/A	N/A	N/A	0.45 J	N/A	-0.004	No

Notes:
ND = Non-detect
N/A = Not applicable

FIGURES

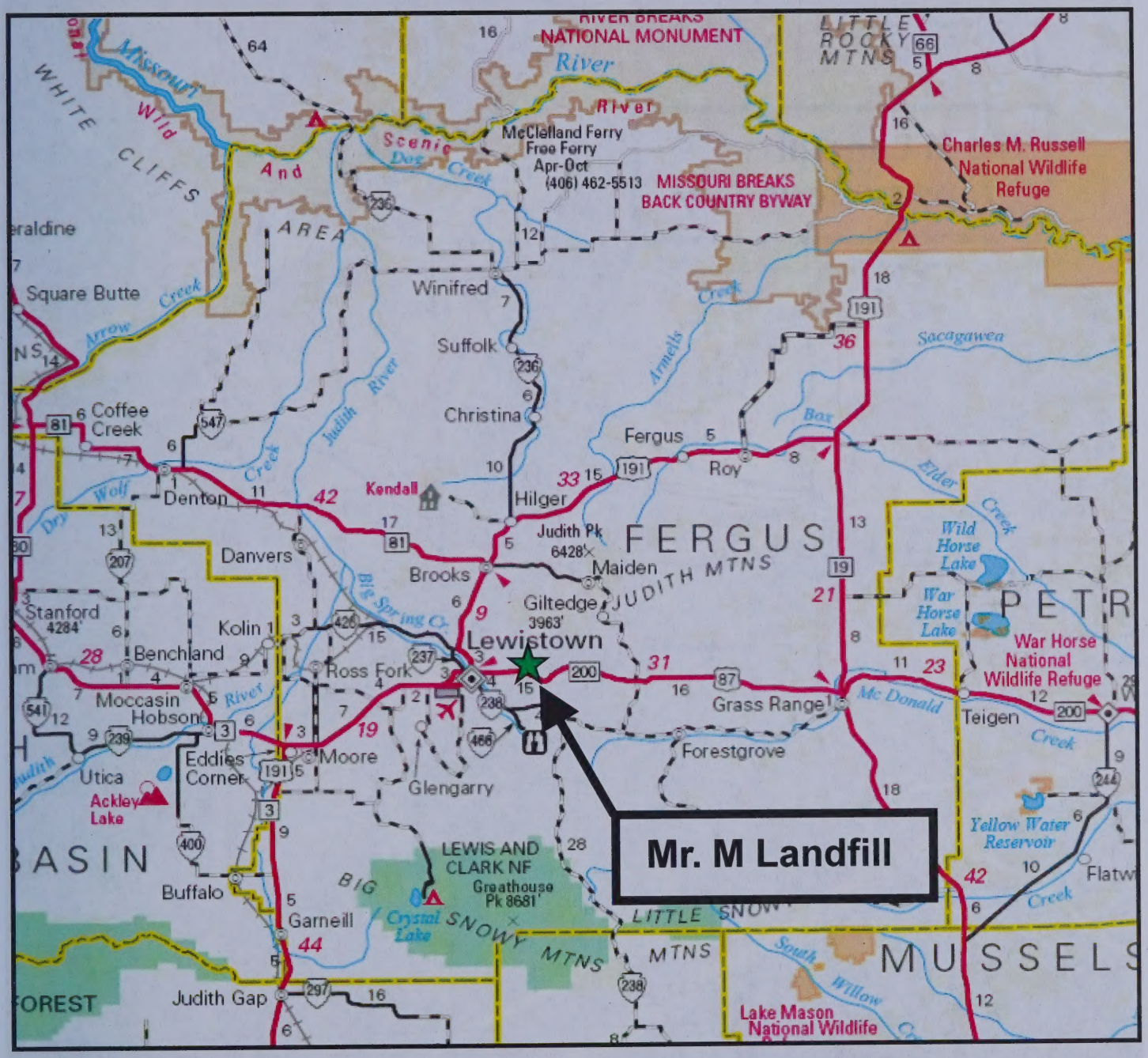


Figure 1: Location Map

Adapted from State of Montana Highway Map.

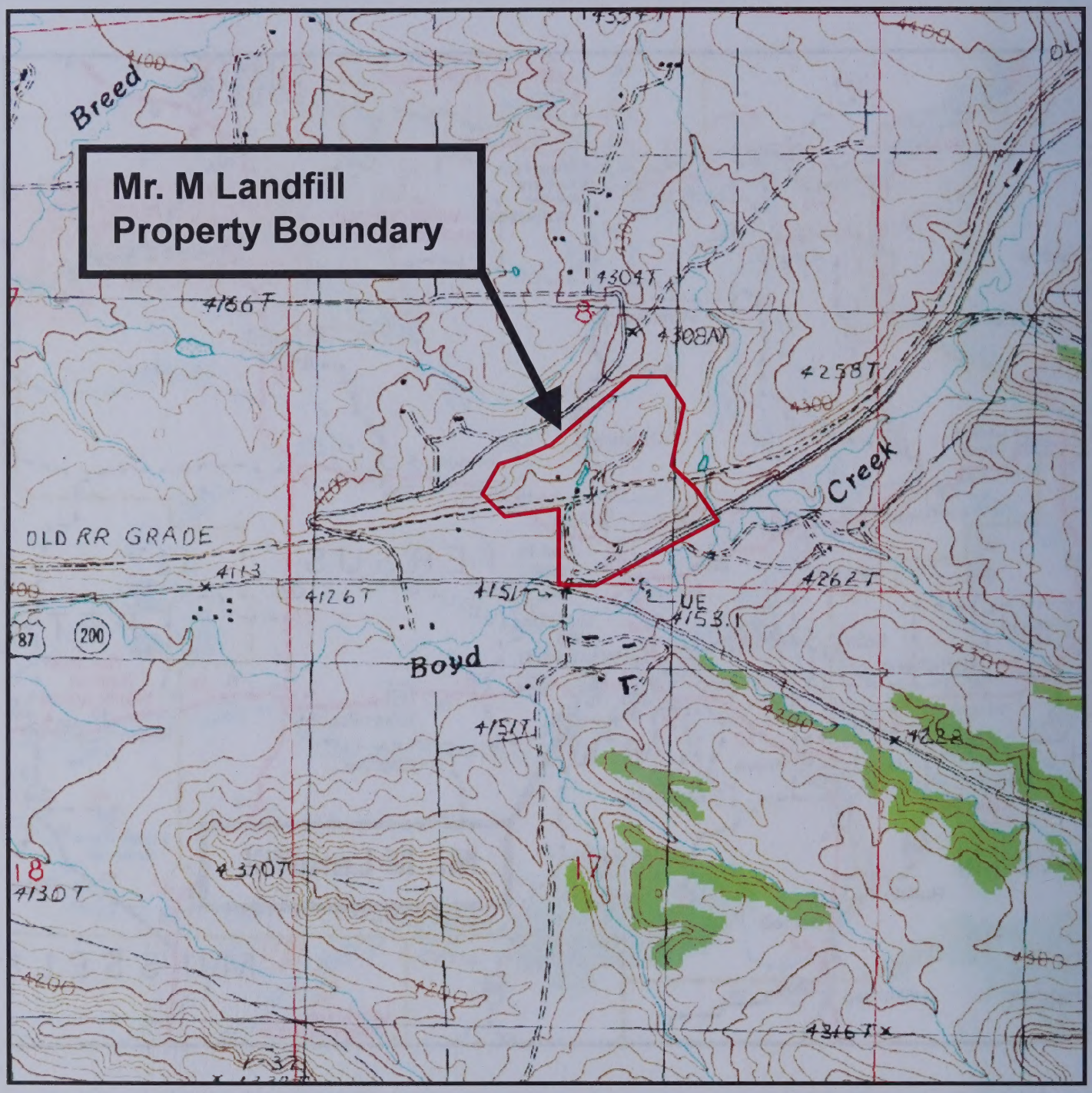


Figure 2: Facility Map

Adapted from USGS Pike Creek 24k Quadrangle.

Figure 3: Locations of Monitoring Points

Base Aerial Photo from 2004.

Figure 4: Groundwater Levels

Base Aerial Photo from 2004.

The reference elevations for MW-9R, MW-11, MW-12, and MW-OW are estimated from topographic contours and field observations.

APPENDIX A: FIELD NOTES & FORMS

10/17/11 Martin Van Oort

1045 On site

1100 Calibrate Methane Meter

1110 MW-1

O_2 = 18.0 CH_4 = 0

H_2S = 0 CO = 0

1115 MW-12

DTW = Flowing (barely)

1120 MW-2

O_2 = 18.3 CH_4 = 0

H_2S = 0 CO = 0

1125 MW-11

DTW = 25.32

1135 MW-6M

O_2 = 19.0 CH_4 = 0

H_2S = 0 CO = 0

1140 MW-6

DTW = 96.57

1155 South Vent

O_2 = 20.9 CH_4 = 0

H_2S = 0 CO = 0

1200 North Vent

O_2 = 20.3 CH_4 = 0

H_2S = 0 CO = 0

10/17/11 Martin Van Oort

1210 MW-5M

O_2 = 19.2 CH_4 = 0

H_2S = 0.2 ↓ 0 CO = 0

1215 MW-5

DTW = 97.10

1225 MW-9R

DTW = 40.78

1230 MW-OW

DTW = 25.40

1235 Calibrate Water Quality Meter

1300 At MW-11 Setting up

1310 Start Purge

1519 Collect Sample + DUP

1535 Finished, pickup

1555 At MW-9R Setting up

1610 Start Purge

1616 Dry, stop to let recover

1620 Working on bottle labels

1700 Leave site

"Rite in the Rain"

10/18/11 Martin Van Oort

800 On site

810 Sample MW-9R

820 Finished, cleaning up

830 At MW-ow, setting up

1035 Sample

1045 Finished, cleaning up

1110 At MW-12, TD = 106

Casing stick-up (inside) 2.75 ft

Filled first 1 in casing in ~30 sec (0.01358 gal)

Flow rate ~0.03 gal/min

Leave MW-12 open & flowing

1130 Lunch

1210 Back at MW-12

1230 Start purge (2.4 gal flowed)

1455 Sample

1505 Finished, cleaning up.

1515 At MW-HW, setting up.

1525 Purge start

1605 Sample

1610 Finished, cleaning up

1620 Paperwork

1645 Leave site

"Rite in the Rain"

Water Level Measurement Form

Site Name: Mister M Landfill Date: 10/17/11

Personnel: Martin Van Oort Equipment: Slope Indicator

Field Conditions:

Well ID	Time	Depth to Water (feet)	Reference Elevation (feet)	Static Water Level (feet)	Comments
MW-12	1115	Flowing			Barely flowing
MW-11	1125	25.32			
MW-6	1140	96.57			
MW-5	1215	97.10			
MW-9R	1225	40.78			
MW-OW	1230	25.40			

Notes:

Signature:

Page 1 of 1

Monitoring Well Purging and Sampling Form

Site Name: M-M Landfill Sample Location: MW-11

Personnel: Martin Van Oost Sample ID: M-M-MW-11 & DUP

Date: 10/17/11 Field Conditions: Sunny, breezy, 50's

Condition of Well: Good

Depth to Water (DTW): 25.32 Total Depth of Well (TD): 82.55

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 9.33 Three Well Volumes: 27.99

Purge Equipment: Bailer Pump Depth: — Start Time: 1320

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1324	1.5			6.47	0.418	8.95	-40.0			
1343	6.5			7.18	0.419	8.63	-37.6			
1400	11.5			7.31	0.419	8.71	-49.4			
1415	16.5			7.39	0.421	8.62	-55.8			
1431	21.5			7.44	0.429	8.66	-61.7			
1448	26.5			7.46	0.394	8.56	-63.8			
1502	30.5			7.48	0.409	8.62	-66.1			

Sample Time: 1510 Sampling Method:

D.P. 1515

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, ~~COD~~	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 31.5 Final Depth to Water: End Time: 1535

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-9R

Personnel: Martin Van Oort Sample ID: MrM-MW-9R

Date: 10/17/11 Field Conditions: Mostly cloudy, windy, ~50°

Condition of Well: Fair

Depth to Water (DTW): 40.78 Total Depth of Well (TD): 50.30

Well Diameter: ~~[illegible]~~ MW 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 1.55 Three Well Volumes: 4.66

Purge Equipment: Bailer Pump Depth: Start Time: 1610

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1617	1.5			6.63	0.671	7.94	-40.1			Dry

Sample Time: 10/18/11 810 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
~~250mL Plastic~~	~~HNO_3~~	~~Dissolved Metals~~	
250mL Plastic	H_2SO_4	Nitrate+Nitrite, ~~COD~~	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 1.75 Final Depth to Water: End Time: 820

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Master M Landfill Sample Location: MW-OW

Personnel: Martin Van Oort Sample ID: MrM-MW-OW

Date: 10/18/11 Field Conditions: Sunny, breezy, upper 20's

Condition of Well: No metal casing, poor

Depth to Water (DTW): 25.40 Total Depth of Well (TD): —

Well Diameter: 4" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Bailer x2 Pump Depth: — Start Time: 855

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
907	6.5			7.26	0.504	7.53	-51.2			
919	11.5			7.52	0.376	7.80	-54.2			
931	16.5			7.64	0.325	7.86	-58.4			
940	21.5			7.65	0.480	8.07	-61.2			
950	26.5			7.65	0.503	8.13	-70.7			
1001	31.5			7.64	0.502	8.21	-85.9			
1011	36.5			7.60	0.489	8.28	-103.6			
1020	41.5			7.56	0.468	8.28	-111.4			
1028	46.5			7.53	0.469	8.36	-113.7			

Sample Time: 1035 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
2 x 40mL Vial	HCl	VOCs	
~~250mL Plastic~~	~~NaOH~~	~~Cyanide~~	
250mL Plastic	HNO_3	Dissolved Metals Fe, Zn only	
~~250mL Plastic~~	~~H_2SO_4~~	~~Nitrate+Nitrite, COD~~	
250mL Plastic	none	Sulfate, Chloride, pH, SC	

Total Volume Purged: 47 Final Depth to Water: — End Time: 1045

Notes:

Sampler Signature:

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-12

Personnel: Martin Van Oort Sample ID: M-M-MW-12

Date: 10/18/11 Field Conditions: Sunny, calm ~80°

Condition of Well: Good

Depth to Water (DTW): Flowing Total Depth of Well (TD): 106

Well Diameter: 2" Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: 17.28 Three Well Volumes: 51.83

Purge Equipment: Bailer Pump Depth: — Start Time: 1230

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1232	4.0			6.28	0.326	10.59	-70.0			2.5 flows
1258	14.0			7.21	0.455	8.79	-78.9			bailer purge
1327	24			7.28	0.452	8.65	-88.2			
1355	34			7.29	0.452	8.71	-88.2			
1427	44			7.30	0.455	8.74	-87.9			
1441	49			7.29	0.453	8.68	-86.1			
1449	52			7.30	0.455	8.69	-87.1			

Sample Time: 1455 Sampling Method: Bailer

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: 52.5 Final Depth to Water: — End Time: 1505

Notes:

Sampler Signature: [signature]

Monitoring Well Purging and Sampling Form

Site Name: Mister M Landfill Sample Location: MW-HW

Personnel: Martin Van Oost Sample ID: MrM-MW-HW

Date: 10/18/17 Field Conditions: Sunny, calm, mid 60's

Condition of Well: Unknown, sampled frost free spigot behind house

Depth to Water (DTW): — Total Depth of Well (TD): —

Well Diameter: — Well Diameter Constant (C): 2" = 0.163 4" = 0.653 6" = 1.469

One Well Volume (gallons) = (TD - DTW) x C: — Three Well Volumes: —

Purge Equipment: Installed Pump Pump Depth: — Start Time: 1525

Time	Vol. (gal)	Rate (gpm)	DTW (feet)	pH (stu)	SC (mS/cm)	Temp. (°C)	ORP (mV)	DO (mg/L)	Turb. (NTU)	Comments
1528	3.4	3.4		6.67	0.576	12.71	-48.0			
1530	17			6.80	0.549	11.02	-55.4			
1535	34			7.09	0.541	10.51	-65.6			
1540	64	6		7.16	0.538	10.31	-66.3			
1545	94			7.19	0.536	10.13	-64.7			
1550	124			7.27	0.533	9.86	-63.1			
1555	154			7.31	0.536	10.20	-61.9			
1600	184			7.33	0.538	10.24	-61.3			

Sample Time: 1605 Sampling Method: Spigot behind house, reduced rate to ~1 gpm

Containers	Preservative	Parameters	Comments
3 x 40mL Vial	HCl	VOCs	
500mL Plastic	none	Sulfate, Chloride, pH, SC	
250mL Plastic	HNO_3	Dissolved Metals	
250mL Plastic	H_2SO_4	Nitrate+Nitrite	

Total Volume Purged: ~200 Final Depth to Water: — End Time: 1610

Notes:

Sampler Signature: [signature]

APPENDIX B: HISTORICAL GROUNDWATER LEVELS

Table B-1: Historical Water Levels

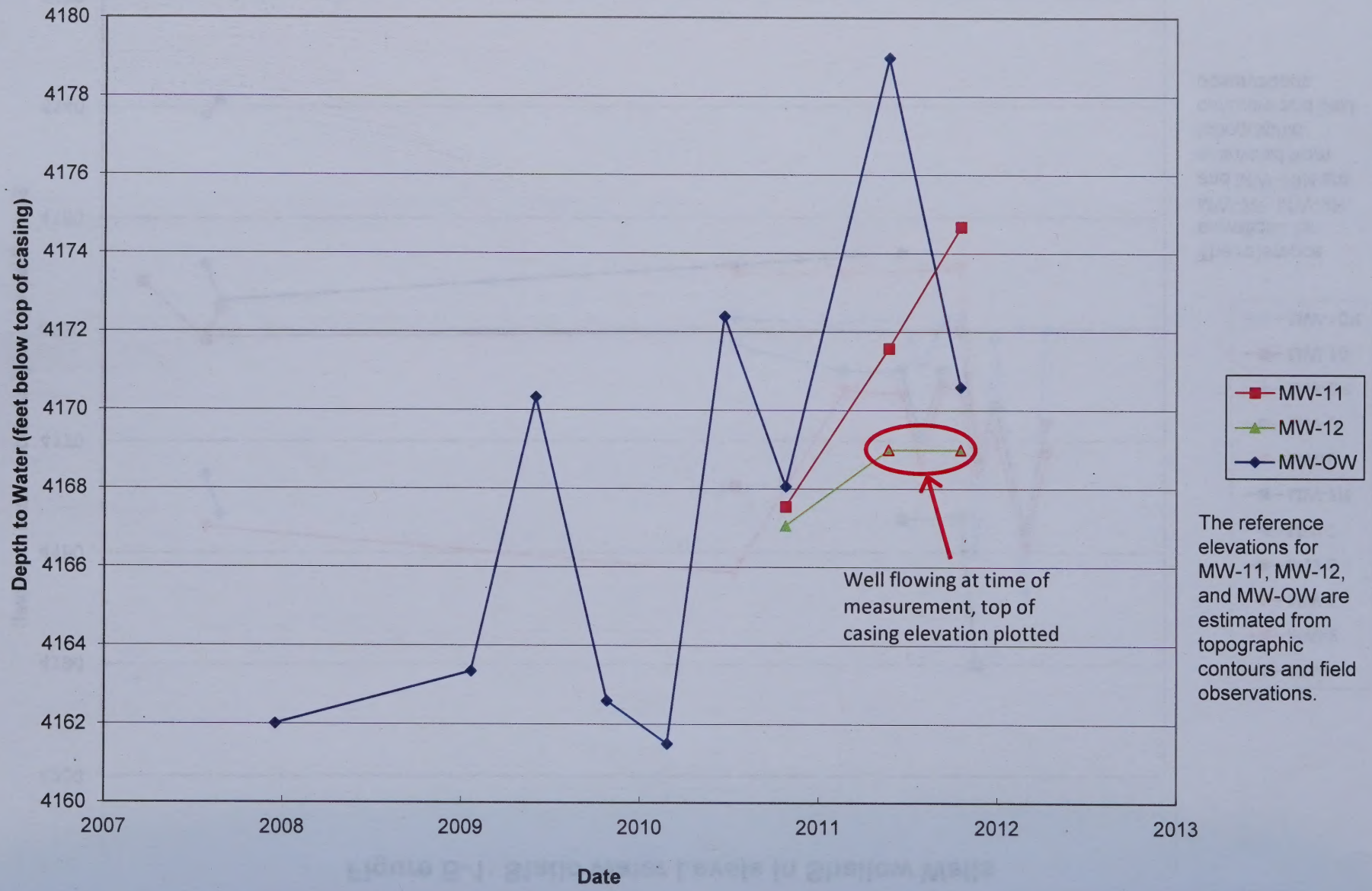
Date	MW-1	MW-2	MW-4	MW-5	MW-6	MW-7	MW-7R	MW-8	MW-9	MW-9R	MW-10	MW-10R	MW-11	MW-12	MW-OW
6/16/93	Dry	Dry	Dry	Dry	Dry	Dry		Dry							NM
10/14/94	NM	NM	NM	NM	NM	NM		NM	Dry		4155.69				NM
12/15/95	4154.12	Dry	Dry	4177.65	4160.64	4173.00		Dry	4140.77		4160.92				NM
3/28/96	4157.37	NM	NM	NM	NM	4176.51		NM	4139.43		4158.09				NM
11/29/05	4154.17	4174.1	NM	4181.82	Dry		Dry	4155.06		4159(1)		4161(1)			NM
12/18/07	Dry	Dry	Dry	4165.54	Dry		Dry	4155.04		4159(1)		4164(1)			4162(1)
1/21/09	4153.12	Dry	NM	4165.75(2)	?(3)		4177(1)(4)	NM		4159(1)		4164(1)			4163(1)
6/1/09	NM	NM	NM	4172.02	NM		NM	NM		4163(1)		4170(1)			4170(1)
10/26/09	NM	NM	NM	4165.23	NM		NM	NM		4160(1)		4164(1)			4163(1)
2/26/10	NM	NM	Dry	4165.44	4160.07		4177(1)	4154.52		4159(1)		NM(5)			4162(1)
6/21/10	NM	NM	NM	4172.91	4171.36		4190(1)	4169.97		4180(1)		NM(5)			4172(1)
10/25/10	NM	NM		4169.50	4166.84					4161(1)			4168(1)	4167(1)	4168(1)
5/23/11	NM	NM		4179.62	4178.04					4183(1)			4172(1)	Flowing(1)(6)	4179(1)
10/17/11	NM	NM		4171.25	4168.30					4160(1)			4175(1)	Flowing(1)(6)	4171(1)

Notes:
NM = Not measured
= Well not present.
(1) Reference elevation estimated from topographic contours (5ft) and field observations
(2) Deeper than tape, 2 ft. of water in well, DTW calculated from TD recorded 12/18/07
(3) Deeper than tape, DTW unknown
(4) 3 in. of water in well, DTW calculated from TD
(5) Well damaged, measurement not possible.
(6) Well flowing artesian at time of measurement, top of casing elevation 4169ft

Figure B-1: Static Water Levels in Shallow Wells

The reference elevations for MW-7R, MW-9R, and MW-10R are estimated from topographic contours and field observations.

Figure B-2: Static Water Levels in Deep Wells



APPENDIX C: LABORATORY QA/QC SUMMARY REPORT

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-007
Client Sample ID Trip Blank 0928/11EMHCL 1618 041811-3

Report Date: 11/01/11
Collection Date: 10/17/11 15:10
DateReceived: 10/19/11
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/24/11 19:41 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/24/11 19:41 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/24/11 19:41 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/24/11 19:41 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/24/11 19:41 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-007
Client Sample ID Trip Blank 0928/11EMHCL 1618 041811-3

Report Date: 11/01/11
Collection Date: 10/17/11 15:10
DateReceived: 10/19/11
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/24/11 19:41 / abb
Surr: 1,2-Dichloroethane-d4	118	%REC		70-130		SW8260B	10/24/11 19:41 / abb
Surr: Dibromofluoromethane	111	%REC		70-130		SW8260B	10/24/11 19:41 / abb
Surr: p-Bromofluorobenzene	103	%REC		70-130		SW8260B	10/24/11 19:41 / abb
Surr: Toluene-d8	107	%REC		70-130		SW8260B	10/24/11 19:41 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B									Analytical Run: COND_111019A	
Sample ID: ICV1_111019A		Initial Calibration Verification Standard							10/19/11 10:51	
Conductivity		986	umhos/cm	1.0	99	90	110			
Method: A2510 B									Batch: 111019A-COND-PROBE-W	
Sample ID: H11100271-001ADUP		Sample Duplicate				Run: COND_111019A			10/19/11 10:54	
Conductivity		609	umhos/cm	1.0				0.1	10	
Sample ID: H11100282-002ADUP		Sample Duplicate				Run: COND_111019A			10/19/11 15:31	
Conductivity		1250	umhos/cm	1.0				0.9	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B									Analytical Run: MAN-TECH_111019B	
Sample ID: CCV1-2199		Continuing Calibration Verification Standard								10/19/11 16:17
pH		3.92	s.u.	0.10	98	97	103			
Sample ID: CCV-2145		Continuing Calibration Verification Standard								10/19/11 16:20
pH		7.00	s.u.	0.10	100	98	102			
Sample ID: ICV-2100		Initial Calibration Verification Standard								10/19/11 16:26
pH		7.00	s.u.	0.10	100	98	102			
Method: A4500-H B										Batch: R75436
Sample ID: CCV3-2041		Continuing Calibration Verification Standard				Run: MAN-TECH_111019B				10/19/11 16:23
pH		10.0	s.u.	0.10	100	99	101			
Sample ID: H11100271-001ADUP		Sample Duplicate				Run: MAN-TECH_111019B				10/19/11 16:57
pH		8.10	s.u.	0.10				0.1	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC102-H_111020A	
Sample ID: ICV102011-12	2	Initial Calibration Verification Standard							10/20/11 16:37	
Chloride		100	mg/L	1.0	100	90	110			
Sulfate		390	mg/L	1.0	98	90	110			
Sample ID: CCV102011-15	2	Continuing Calibration Verification Standard							10/20/11 17:18	
Chloride		100	mg/L	1.0	104	90	110			
Sulfate		400	mg/L	1.0	99	90	110			
Method: E300.0										Batch: R75479
Sample ID: ICB102011-13	2	Method Blank				Run: IC102-H_111020A			10/20/11 16:50	
Chloride		ND	mg/L	0.02						
Sulfate		ND	mg/L	0.02						
Sample ID: LFB102011-14	2	Laboratory Fortified Blank				Run: IC102-H_111020A			10/20/11 17:04	
Chloride		49	mg/L	1.0	97	90	110			
Sulfate		190	mg/L	1.1	95	90	110			
Sample ID: H11100280-001AMS	2	Sample Matrix Spike				Run: IC102-H_111020A			10/20/11 19:06	
Chloride		53	mg/L	1.0	102	90	110			
Sulfate		240	mg/L	1.1	100	90	110			
Sample ID: H11100280-001AMSD	2	Sample Matrix Spike Duplicate				Run: IC102-H_111020A			10/20/11 19:20	
Chloride		55	mg/L	1.0	104	90	110	2.1	20	
Sulfate		240	mg/L	1.1	102	90	110	1.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA203-HE_111026B	
Sample ID: ICV		Initial Calibration Verification Standard								10/26/11 12:51
Nitrogen, Nitrate+Nitrite as N		1.02	mg/L	0.010	102	90	110			
Sample ID: CCV		Continuing Calibration Verification Standard								10/26/11 12:54
Nitrogen, Nitrate+Nitrite as N		0.512	mg/L	0.010	102	90	110			
Sample ID: ICB		Initial Calibration Blank, Instrument Blank								10/26/11 12:57
Nitrogen, Nitrate+Nitrite as N		-0.00624	mg/L	0.010		0	0			
Method: E353.2										Batch: R75631
Sample ID: LCS		Laboratory Control Sample				Run: FIA203-HE_111026B				10/26/11 12:52
Nitrogen, Nitrate+Nitrite as N		24.5	mg/L	0.20	101	90	110			
Sample ID: LFB		Laboratory Fortified Blank				Run: FIA203-HE_111026B				10/26/11 12:53
Nitrogen, Nitrate+Nitrite as N		0.990	mg/L	0.010	99	90	110			
Sample ID: MBLK		Method Blank				Run: FIA203-HE_111026B				10/26/11 12:58
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.0009						
Sample ID: H11100280-001CMS		Sample Matrix Spike				Run: FIA203-HE_111026B				10/26/11 13:05
Nitrogen, Nitrate+Nitrite as N		1.000	mg/L	0.010	100	90	110			
Sample ID: H11100280-001CMSD		Sample Matrix Spike Duplicate				Run: FIA203-HE_111026B				10/26/11 13:06
Nitrogen, Nitrate+Nitrite as N		1.02	mg/L	0.010	101	90	110	1.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020								Analytical Run: ICPMS204-B_111022C		
Sample ID: ICV STD	16	Initial Calibration Verification Standard								10/22/11 21:07
Antimony		0.0496	mg/L	0.0010	99	90	110			
Arsenic		0.0503	mg/L	0.0010	101	90	110			
Barium		0.0506	mg/L	0.0010	101	90	110			
Beryllium		0.0262	mg/L	0.0010	105	90	110			
Cadmium		0.0261	mg/L	0.0010	104	90	110			
Chromium		0.0506	mg/L	0.0010	101	90	110			
Cobalt		0.0516	mg/L	0.0010	103	90	110			
Copper		0.0515	mg/L	0.0010	103	90	110			
Iron		0.253	mg/L	0.0010	101	90	110			
Lead		0.0494	mg/L	0.0010	99	90	110			
Nickel		0.0513	mg/L	0.0010	103	90	110			
Selenium		0.0510	mg/L	0.0010	102	90	110			
Silver		0.0243	mg/L	0.0010	97	90	110			
Thallium		0.0500	mg/L	0.0010	100	90	110			
Vanadium		0.0503	mg/L	0.0010	101	90	110			
Zinc		0.0514	mg/L	0.0010	103	90	110			
Sample ID: ICV STD	16	Initial Calibration Verification Standard								10/23/11 08:25
Antimony		0.0504	mg/L	0.0010	101	90	110			
Arsenic		0.0512	mg/L	0.0010	102	90	110			
Barium		0.0508	mg/L	0.0010	102	90	110			
Beryllium		0.0255	mg/L	0.0010	102	90	110			
Cadmium		0.0265	mg/L	0.0010	106	90	110			
Chromium		0.0519	mg/L	0.0010	104	90	110			
Cobalt		0.0513	mg/L	0.0010	103	90	110			
Copper		0.0526	mg/L	0.0010	105	90	110			
Iron		0.247	mg/L	0.0010	99	90	110			
Lead		0.0503	mg/L	0.0010	101	90	110			
Nickel		0.0519	mg/L	0.0010	104	90	110			
Selenium		0.0497	mg/L	0.0010	99	90	110			
Silver		0.0247	mg/L	0.0010	99	90	110			
Thallium		0.0503	mg/L	0.0010	101	90	110			
Vanadium		0.0514	mg/L	0.0010	103	90	110			
Zinc		0.0536	mg/L	0.0010	107	90	110			
Method: SW6020										Batch: R75571
Sample ID: ICB	16	Method Blank				Run: ICPMS204-B_111022C				10/22/11 22:28
Antimony		ND	mg/L	7E-06						
Arsenic		ND	mg/L	3E-05						
Barium		ND	mg/L	3E-05						
Beryllium		ND	mg/L	2E-05						
Cadmium		ND	mg/L	1E-05						
Chromium		ND	mg/L	6E-05						
Cobalt		ND	mg/L	9E-06						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R75571
Sample ID: ICB	16	Method Blank				Run: ICPMS204-B_111022C				10/22/11 22:28
Copper		ND	mg/L	3E-05						
Iron		ND	mg/L	0.0002						
Lead		ND	mg/L	1.0E-05						
Nickel		ND	mg/L	5E-05						
Selenium		ND	mg/L	4E-05						
Silver		ND	mg/L	3E-05						
Thallium		ND	mg/L	7E-06						
Vanadium		ND	mg/L	1E-05						
Zinc		ND	mg/L	0.0003						
Sample ID: LFB	16	Laboratory Fortified Blank				Run: ICPMS204-B_111022C				10/22/11 22:35
Antimony		0.0453	mg/L	0.0010	91	80	120			
Arsenic		0.0484	mg/L	0.0010	97	80	120			
Barium		0.0470	mg/L	0.0010	94	80	120			
Beryllium		0.0510	mg/L	0.0010	102	80	120			
Cadmium		0.0470	mg/L	0.0010	94	80	120			
Chromium		0.0487	mg/L	0.0010	97	80	120			
Cobalt		0.0482	mg/L	0.0010	96	80	120			
Copper		0.0478	mg/L	0.0010	96	80	120			
Iron		4.85	mg/L	0.0010	97	80	120			
Lead		0.0481	mg/L	0.0010	96	80	120			
Nickel		0.0477	mg/L	0.0010	95	80	120			
Selenium		0.0493	mg/L	0.0010	99	80	120			
Silver		0.0183	mg/L	0.0010	91	80	120			
Thallium		0.0484	mg/L	0.0010	97	80	120			
Vanadium		0.0488	mg/L	0.0010	98	80	120			
Zinc		0.0492	mg/L	0.0010	98	80	120			
Sample ID: H11100280-001BMS	16	Sample Matrix Spike				Run: ICPMS204-B_111022C				10/23/11 17:24
Antimony		0.0465	mg/L	0.0050	93	75	125			
Arsenic		0.0492	mg/L	0.0050	98	75	125			
Barium		0.0874	mg/L	0.10	97	75	125			
Beryllium		0.0499	mg/L	0.0010	100	75	125			
Cadmium		0.0473	mg/L	0.0010	95	75	125			
Chromium		0.0503	mg/L	0.010	100	75	125			
Cobalt		0.0496	mg/L	0.010	99	75	125			
Copper		0.0486	mg/L	0.010	97	75	125			
Iron		4.92	mg/L	0.030	94	75	125			
Lead		0.0488	mg/L	0.010	98	75	125			
Nickel		0.0488	mg/L	0.010	97	75	125			
Selenium		0.0459	mg/L	0.0050	92	75	125			
Silver		0.0189	mg/L	0.0050	94	75	125			
Thallium		0.0484	mg/L	0.0050	97	75	125			
Vanadium		0.0508	mg/L	0.10	102	75	125			
Zinc		0.0496	mg/L	0.010	94	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: R75571
Sample ID: H11100280-001BMS	16	Sample Matrix Spike				Run: ICPMS204-B_111022C			10/23/11 17:24	
Sample ID: H11100280-001BMSD	16	Sample Matrix Spike Duplicate				Run: ICPMS204-B_111022C			10/23/11 17:30	
Antimony		0.0470	mg/L	0.0050	94	75	125	1.1	20	
Arsenic		0.0497	mg/L	0.0050	99	75	125	1.0	20	
Barium		0.0871	mg/L	0.10	96	75	125		20	
Beryllium		0.0495	mg/L	0.0010	99	75	125	0.7	20	
Cadmium		0.0478	mg/L	0.0010	96	75	125	1.1	20	
Chromium		0.0504	mg/L	0.010	101	75	125	0.3	20	
Cobalt		0.0506	mg/L	0.010	101	75	125	1.9	20	
Copper		0.0489	mg/L	0.010	97	75	125	0.6	20	
Iron		4.84	mg/L	0.030	92	75	125	1.5	20	
Lead		0.0496	mg/L	0.010	99	75	125	1.6	20	
Nickel		0.0490	mg/L	0.010	97	75	125	0.5	20	
Selenium		0.0456	mg/L	0.0050	91	75	125	0.6	20	
Silver		0.0185	mg/L	0.0050	92	75	125	2.2	20	
Thallium		0.0486	mg/L	0.0050	97	75	125	0.5	20	
Vanadium		0.0506	mg/L	0.10	101	75	125		20	
Zinc		0.0492	mg/L	0.010	94	75	125	0.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R75608
Sample ID: CCV102411B	54	Continuing Calibration Verification Standard								10/24/11 15:40
Acetone		53.2	ug/L	20	106	70	130			
Acrylonitrile		50.0	ug/L	20	100	70	130			
Benzene		5.44	ug/L	1.0	109	70	130			
Bromochloromethane		5.16	ug/L	1.0	103	70	130			
Bromodichloromethane		6.00	ug/L	1.0	120	70	130			
Bromoform		4.84	ug/L	1.0	97	70	130			
Bromomethane		4.52	ug/L	1.0	90	70	130			
Carbon disulfide		5.92	ug/L	1.0	118	70	130			
Carbon tetrachloride		5.64	ug/L	1.0	113	70	130			
Chlorobenzene		5.52	ug/L	1.0	110	70	130			
Chlorodibromomethane		5.08	ug/L	1.0	102	70	130			
Chloroethane		5.52	ug/L	1.0	110	70	130			
Chloroform		5.56	ug/L	1.0	111	80	120			
Chloromethane		4.92	ug/L	1.0	98	70	130			
1,2-Dibromo-3-chloropropane		5.88	ug/L	1.0	118	70	130			
1,2-Dibromoethane		5.20	ug/L	1.0	104	70	130			
Dibromomethane		5.04	ug/L	1.0	101	70	130			
1,2-Dichlorobenzene		5.36	ug/L	1.0	107	70	130			
1,4-Dichlorobenzene		5.08	ug/L	1.0	102	70	130			
trans-1,4-Dichloro-2-butene		5.12	ug/L	1.0	102	70	130			
Dichlorodifluoromethane		5.28	ug/L	1.0	106	70	130			
1,1-Dichloroethane		5.64	ug/L	1.0	113	70	130			
1,2-Dichloroethane		5.20	ug/L	1.0	104	70	130			
1,1-Dichloroethene		5.56	ug/L	1.0	111	80	120			
cis-1,2-Dichloroethene		5.60	ug/L	1.0	112	70	130			
trans-1,2-Dichloroethene		5.52	ug/L	1.0	110	70	130			
1,2-Dichloropropane		6.20	ug/L	1.0	124	80	120			S
cis-1,3-Dichloropropene		5.76	ug/L	1.0	115	70	130			
trans-1,3-Dichloropropene		5.68	ug/L	1.0	114	70	130			
Ethylbenzene		5.64	ug/L	1.0	113	80	120			
2-Hexanone		54.4	ug/L	20	109	70	130			
Iodomethane		4.96	ug/L	1.0	99	70	130			
Methyl ethyl ketone		46.8	ug/L	20	94	70	130			
Methyl isobutyl ketone		50.0	ug/L	20	100	70	130			
Methylene chloride		5.00	ug/L	1.0	100	70	130			
Styrene		5.64	ug/L	1.0	113	70	130			
1,1,1,2-Tetrachloroethane		4.72	ug/L	1.0	94	70	130			
1,1,2,2-Tetrachloroethane		5.12	ug/L	1.0	102	70	130			
Tetrachloroethene		5.72	ug/L	1.0	114	70	130			
Toluene		5.68	ug/L	1.0	114	80	120			
1,1,1-Trichloroethane		5.28	ug/L	1.0	106	70	130			
1,1,2-Trichloroethane		5.32	ug/L	1.0	106	70	130			
Trichloroethene		5.96	ug/L	1.0	119	70	130			
Trichlorofluoromethane		4.44	ug/L	1.0	89	70	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R75608
Sample ID: CCV102411B	54	Continuing Calibration Verification Standard								10/24/11 15:40
1,2,3-Trichloropropane		4.72	ug/L	1.0	94	70	130			
Vinyl acetate		5.24	ug/L	1.0	105	70	130			
Vinyl chloride		5.48	ug/L	1.0	110	80	120			
m+p-Xylenes		10.8	ug/L	1.0	108	70	130			
o-Xylene		5.12	ug/L	1.0	102	70	130			
Xylenes, Total		16.0	ug/L	1.0	106	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	112	70	130			
Surr: Dibromofluoromethane				1.0	94	70	130			
Surr: p-Bromofluorobenzene				1.0	103	70	130			
Surr: Toluene-d8				1.0	105	70	130			
Method: SW8260B										Batch: R75608
Sample ID: LCS102411A	54	Laboratory Control Sample				Run: 1SATURN_111024A				10/24/11 16:20
Acetone		51.2	ug/L	20	102	70	130			
Acrylonitrile		56.0	ug/L	20	112	70	130			
Benzene		5.36	ug/L	1.0	107	70	130			
Bromochloromethane		5.24	ug/L	1.0	105	70	130			
Bromodichloromethane		5.36	ug/L	1.0	107	70	130			
Bromoform		4.76	ug/L	1.0	95	70	130			
Bromomethane		4.16	ug/L	1.0	83	70	130			
Carbon disulfide		6.44	ug/L	1.0	129	70	130			
Carbon tetrachloride		5.28	ug/L	1.0	106	70	130			
Chlorobenzene		5.16	ug/L	1.0	103	70	130			
Chlorodibromomethane		4.56	ug/L	1.0	91	70	130			
Chloroethane		5.36	ug/L	1.0	107	70	130			
Chloroform		5.48	ug/L	1.0	110	70	130			
Chloromethane		4.76	ug/L	1.0	95	70	130			
1,2-Dibromo-3-chloropropane		6.00	ug/L	1.0	120	70	130			
1,2-Dibromoethane		5.08	ug/L	1.0	102	70	130			
Dibromomethane		4.84	ug/L	1.0	97	70	130			
1,2-Dichlorobenzene		5.72	ug/L	1.0	114	70	130			
1,4-Dichlorobenzene		5.20	ug/L	1.0	104	70	130			
trans-1,4-Dichloro-2-butene		5.24	ug/L	1.0	105	70	130			
Dichlorodifluoromethane		3.53	ug/L	1.0	71	70	130			
1,1-Dichloroethane		5.76	ug/L	1.0	115	70	130			
1,2-Dichloroethane		5.72	ug/L	1.0	114	70	130			
1,1-Dichloroethene		5.56	ug/L	1.0	111	70	130			
cis-1,2-Dichloroethene		5.40	ug/L	1.0	108	70	130			
trans-1,2-Dichloroethene		5.36	ug/L	1.0	107	70	130			
1,2-Dichloropropane		5.36	ug/L	1.0	107	70	130			
cis-1,3-Dichloropropene		5.20	ug/L	1.0	104	70	130			
trans-1,3-Dichloropropene		5.28	ug/L	1.0	106	70	130			
Ethylbenzene		5.32	ug/L	1.0	106	70	130			
2-Hexanone		53.2	ug/L	20	106	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R75608
Sample ID: LCS102411A	54	Laboratory Control Sample				Run: 1SATURN_111024A				10/24/11 16:20
Iodomethane		4.00	ug/L	1.0	80	70	130			
Methyl ethyl ketone		43.6	ug/L	20	87	70	130			
Methyl isobutyl ketone		52.4	ug/L	20	105	70	130			
Methylene chloride		5.08	ug/L	1.0	102	70	130			
Styrene		5.04	ug/L	1.0	101	70	130			
1,1,1,2-Tetrachloroethane		4.68	ug/L	1.0	94	70	130			
1,1,2,2-Tetrachloroethane		5.28	ug/L	1.0	106	70	130			
Tetrachloroethene		5.40	ug/L	1.0	108	70	130			
Toluene		5.36	ug/L	1.0	107	70	130			
1,1,1-Trichloroethane		5.28	ug/L	1.0	106	70	130			
1,1,2-Trichloroethane		4.96	ug/L	1.0	99	70	130			
Trichloroethene		5.32	ug/L	1.0	106	70	130			
Trichlorofluoromethane		4.96	ug/L	1.0	99	70	130			
1,2,3-Trichloropropane		4.76	ug/L	1.0	95	70	130			
Vinyl acetate		5.92	ug/L	1.0	118	70	130			
Vinyl chloride		4.56	ug/L	1.0	91	70	130			
m+p-Xylenes		9.80	ug/L	1.0	98	70	130			
o-Xylene		4.88	ug/L	1.0	98	70	130			
Xylenes, Total		14.7	ug/L	1.0	98	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	110	70	130			
Surr: Dibromofluoromethane				1.0	94	70	130			
Surr: p-Bromofluorobenzene				1.0	105	70	130			
Surr: Toluene-d8				1.0	99	70	130			
Sample ID: MB102411A	54	Method Blank				Run: 1SATURN_111024A				10/24/11 19:09
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R75608
Sample ID: MB102411A	54	Method Blank				Run: 1SATURN_111024A				10/24/11 19:09
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	121	70	130			
Surr: Dibromofluoromethane				1.0	115	70	130			
Surr: p-Bromofluorobenzene				1.0	98	70	130			
Surr: Toluene-d8				1.0	96	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R75754
Sample ID: CCV103111B	54	Continuing Calibration Verification Standard								10/31/11 11:35
Acetone		58.8	ug/L	20	118	70	130			
Acrylonitrile		54.8	ug/L	20	110	70	130			
Benzene		5.96	ug/L	1.0	119	70	130			
Bromochloromethane		5.80	ug/L	1.0	116	70	130			
Bromodichloromethane		6.04	ug/L	1.0	121	70	130			
Bromoform		5.20	ug/L	1.0	104	70	130			
Bromomethane		6.36	ug/L	1.0	127	70	130			
Carbon disulfide		6.16	ug/L	1.0	123	70	130			
Carbon tetrachloride		5.88	ug/L	1.0	118	70	130			
Chlorobenzene		5.48	ug/L	1.0	110	70	130			
Chlorodibromomethane		4.96	ug/L	1.0	99	70	130			
Chloroethane		4.80	ug/L	1.0	96	70	130			
Chloroform		5.88	ug/L	1.0	118	80	120			
Chloromethane		6.08	ug/L	1.0	122	70	130			
1,2-Dibromo-3-chloropropane		5.68	ug/L	1.0	114	70	130			
1,2-Dibromoethane		5.28	ug/L	1.0	106	70	130			
Dibromomethane		4.80	ug/L	1.0	96	70	130			
1,2-Dichlorobenzene		5.84	ug/L	1.0	117	70	130			
1,4-Dichlorobenzene		5.88	ug/L	1.0	118	70	130			
trans-1,4-Dichloro-2-butene		5.88	ug/L	1.0	118	70	130			
Dichlorodifluoromethane		5.04	ug/L	1.0	101	70	130			
1,1-Dichloroethane		6.52	ug/L	1.0	130	70	130			
1,2-Dichloroethane		5.56	ug/L	1.0	111	70	130			
1,1-Dichloroethene		6.00	ug/L	1.0	120	80	120			
cis-1,2-Dichloroethene		6.08	ug/L	1.0	122	70	130			
trans-1,2-Dichloroethene		5.92	ug/L	1.0	118	70	130			
1,2-Dichloropropane		5.96	ug/L	1.0	119	80	120			
cis-1,3-Dichloropropene		5.92	ug/L	1.0	118	70	130			
trans-1,3-Dichloropropene		5.52	ug/L	1.0	110	70	130			
Ethylbenzene		5.80	ug/L	1.0	116	80	120			
2-Hexanone		56.8	ug/L	20	114	70	130			
Iodomethane		5.20	ug/L	1.0	104	70	130			
Methyl ethyl ketone		56.4	ug/L	20	113	70	130			
Methyl isobutyl ketone		50.0	ug/L	20	100	70	130			
Methylene chloride		5.44	ug/L	1.0	109	70	130			
Styrene		5.72	ug/L	1.0	114	70	130			
1,1,1,2-Tetrachloroethane		5.36	ug/L	1.0	107	70	130			
1,1,2,2-Tetrachloroethane		5.88	ug/L	1.0	118	70	130			
Tetrachloroethene		5.28	ug/L	1.0	106	70	130			
Toluene		5.80	ug/L	1.0	116	80	120			
1,1,1-Trichloroethane		5.96	ug/L	1.0	119	70	130			
1,1,2-Trichloroethane		5.16	ug/L	1.0	103	70	130			
Trichloroethene		5.56	ug/L	1.0	111	70	130			
Trichlorofluoromethane		5.68	ug/L	1.0	114	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R75754
Sample ID: CCV103111B	54	Continuing Calibration Verification Standard								10/31/11 11:35
1,2,3-Trichloropropane		4.12	ug/L	1.0	82	70	130			
Vinyl acetate		6.24	ug/L	1.0	125	70	130			
Vinyl chloride		5.84	ug/L	1.0	117	80	120			
m+p-Xylenes		10.4	ug/L	1.0	104	70	130			
o-Xylene		5.08	ug/L	1.0	102	70	130			
Xylenes, Total		15.5	ug/L	1.0	103	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	112	70	130			
Surr: Dibromofluoromethane				1.0	95	70	130			
Surr: p-Bromofluorobenzene				1.0	107	70	130			
Surr: Toluene-d8				1.0	102	70	130			
Method: SW8260B										Batch: R75754
Sample ID: LCS103111B	54	Laboratory Control Sample				Run: 1SATURN_111031A				10/31/11 13:08
Acetone		58.0	ug/L	20	116	70	130			
Acrylonitrile		61.6	ug/L	20	123	70	130			
Benzene		5.72	ug/L	1.0	114	70	130			
Bromochloromethane		5.56	ug/L	1.0	111	70	130			
Bromodichloromethane		5.68	ug/L	1.0	114	70	130			
Bromoform		4.76	ug/L	1.0	95	70	130			
Bromomethane		6.48	ug/L	1.0	130	70	130			
Carbon disulfide		6.48	ug/L	1.0	130	70	130			
Carbon tetrachloride		5.56	ug/L	1.0	111	70	130			
Chlorobenzene		5.36	ug/L	1.0	107	70	130			
Chlorodibromomethane		4.84	ug/L	1.0	97	70	130			
Chloroethane		6.16	ug/L	1.0	123	70	130			
Chloroform		5.84	ug/L	1.0	117	70	130			
Chloromethane		6.32	ug/L	1.0	126	70	130			
1,2-Dibromo-3-chloropropane		5.88	ug/L	1.0	118	70	130			
1,2-Dibromoethane		5.04	ug/L	1.0	101	70	130			
Dibromomethane		4.44	ug/L	1.0	89	70	130			
1,2-Dichlorobenzene		5.68	ug/L	1.0	114	70	130			
1,4-Dichlorobenzene		5.48	ug/L	1.0	110	70	130			
trans-1,4-Dichloro-2-butene		5.52	ug/L	1.0	110	70	130			
Dichlorodifluoromethane		5.80	ug/L	1.0	116	70	130			
1,1-Dichloroethane		6.36	ug/L	1.0	127	70	130			
1,2-Dichloroethane		5.24	ug/L	1.0	105	70	130			
1,1-Dichloroethene		5.88	ug/L	1.0	118	70	130			
cis-1,2-Dichloroethene		5.76	ug/L	1.0	115	70	130			
trans-1,2-Dichloroethene		5.56	ug/L	1.0	111	70	130			
1,2-Dichloropropane		5.80	ug/L	1.0	116	70	130			
cis-1,3-Dichloropropene		5.64	ug/L	1.0	113	70	130			
trans-1,3-Dichloropropene		5.52	ug/L	1.0	110	70	130			
Ethylbenzene		6.04	ug/L	1.0	121	70	130			
2-Hexanone		53.6	ug/L	20	107	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R75754
Sample ID: LCS103111B	54	Laboratory Control Sample				Run: 1SATURN_111031A				10/31/11 13:08
Iodomethane		4.28	ug/L	1.0	86	70	130			
Methyl ethyl ketone		48.8	ug/L	20	98	70	130			
Methyl isobutyl ketone		50.0	ug/L	20	100	70	130			
Methylene chloride		5.48	ug/L	1.0	104	70	130			
Styrene		5.40	ug/L	1.0	108	70	130			
1,1,1,2-Tetrachloroethane		5.12	ug/L	1.0	102	70	130			
1,1,2,2-Tetrachloroethane		5.76	ug/L	1.0	115	70	130			
Tetrachloroethene		5.36	ug/L	1.0	107	70	130			
Toluene		5.68	ug/L	1.0	114	70	130			
1,1,1-Trichloroethane		5.76	ug/L	1.0	115	70	130			
1,1,2-Trichloroethane		5.00	ug/L	1.0	100	70	130			
Trichloroethene		5.40	ug/L	1.0	108	70	130			
Trichlorofluoromethane		6.00	ug/L	1.0	120	70	130			
1,2,3-Trichloropropane		4.20	ug/L	1.0	84	70	130			
Vinyl acetate		6.16	ug/L	1.0	123	70	130			
Vinyl chloride		5.76	ug/L	1.0	115	70	130			
m+p-Xylenes		10.0	ug/L	1.0	100	70	130			
o-Xylene		5.24	ug/L	1.0	105	70	130			
Xylenes, Total		15.3	ug/L	1.0	102	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	112	70	130			
Surr: Dibromofluoromethane				1.0	97	70	130			
Surr: p-Bromofluorobenzene				1.0	105	70	130			
Surr: Toluene-d8				1.0	102	70	130			
Sample ID: MB103111A	54	Method Blank				Run: 1SATURN_111031A				10/31/11 14:22
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R75754
Sample ID: MB103111A	54	Method Blank				Run: 1SATURN_111031A				10/31/11 14:22
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	119	70	130			
Surr: Dibromofluoromethane				1.0	107	70	130			
Surr: p-Bromofluorobenzene				1.0	103	70	130			
Surr: Toluene-d8				1.0	98	70	130			
Sample ID: H11100280-002DMS	54	Sample Matrix Spike				Run: 1SATURN_111031A				10/31/11 20:41
Acetone		102	ug/L	40	102	70	130			
Acrylonitrile		111	ug/L	40	111	70	130			
Benzene		10.4	ug/L	2.0	104	70	130			
Bromochloromethane		10.1	ug/L	2.0	101	70	130			
Bromodichloromethane		10.3	ug/L	2.0	103	70	130			
Bromoform		8.64	ug/L	2.0	86	70	130			
Bromomethane		4.70	ug/L	2.0	47	70	130			S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R75754
Sample ID: H11100280-002DMS	54	Sample Matrix Spike				Run: 1SATURN_111031A				10/31/11 20:41
Carbon disulfide		12.8	ug/L	2.0	128	70	130			
Carbon tetrachloride		10.0	ug/L	2.0	100	70	130			
Chlorobenzene		9.60	ug/L	2.0	96	70	130			
Chlorodibromomethane		8.48	ug/L	2.0	85	70	130			
Chloroethane		11.4	ug/L	2.0	114	70	130			
Chloroform		10.6	ug/L	2.0	106	70	130			
Chloromethane		10.9	ug/L	2.0	109	70	130			
1,2-Dibromo-3-chloropropane		10.7	ug/L	2.0	107	70	130			
1,2-Dibromoethane		8.80	ug/L	2.0	88	70	130			
Dibromomethane		8.08	ug/L	2.0	81	70	130			
1,2-Dichlorobenzene		9.92	ug/L	2.0	99	70	130			
1,4-Dichlorobenzene		9.84	ug/L	2.0	98	70	130			
trans-1,4-Dichloro-2-butene		9.92	ug/L	2.0	99	70	130			
Dichlorodifluoromethane		10.4	ug/L	2.0	104	70	130			
1,1-Dichloroethane		11.7	ug/L	2.0	117	70	130			
1,2-Dichloroethane		10.0	ug/L	2.0	100	70	130			
1,1-Dichloroethene		10.4	ug/L	2.0	104	70	130			
cis-1,2-Dichloroethene		10.6	ug/L	2.0	106	70	130			
trans-1,2-Dichloroethene		11.0	ug/L	2.0	110	70	130			
1,2-Dichloropropane		11.0	ug/L	2.0	110	70	130			
cis-1,3-Dichloropropene		10.1	ug/L	2.0	101	70	130			
trans-1,3-Dichloropropene		9.44	ug/L	2.0	94	70	130			
Ethylbenzene		10.8	ug/L	2.0	108	70	130			
2-Hexanone		102	ug/L	40	102	70	130			
Iodomethane		7.78	ug/L	2.0	78	70	130			
Methyl ethyl ketone		103	ug/L	40	103	70	130			
Methyl isobutyl ketone		93.6	ug/L	40	94	70	130			
Methylene chloride		9.68	ug/L	2.0	97	70	130			
Styrene		9.84	ug/L	2.0	98	70	130			
1,1,1,2-Tetrachloroethane		9.28	ug/L	2.0	93	70	130			
1,1,2,2-Tetrachloroethane		10.7	ug/L	2.0	107	70	130			
Tetrachloroethene		9.04	ug/L	2.0	90	70	130			
Toluene		10.3	ug/L	2.0	103	70	130			
1,1,1-Trichloroethane		10.5	ug/L	2.0	105	70	130			
1,1,2-Trichloroethane		9.36	ug/L	2.0	94	70	130			
Trichloroethene		9.36	ug/L	2.0	94	70	130			
Trichlorofluoromethane		11.1	ug/L	2.0	111	70	130			
1,2,3-Trichloropropane		8.72	ug/L	2.0	87	70	130			
Vinyl acetate		11.8	ug/L	2.0	118	70	130			
Vinyl chloride		10.7	ug/L	2.0	107	70	130			
m+p-Xylenes		18.4	ug/L	2.0	92	70	130			
o-Xylene		9.12	ug/L	2.0	91	70	130			
Xylenes, Total		27.5	ug/L	2.0	92	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	115	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R75754	
Sample ID: H11100280-002DMS	54	Sample Matrix Spike				Run: 1SATURN_111031A			10/31/11 20:41	
Surr: Dibromofluoromethane				2.0	98	70	130			
Surr: p-Bromofluorobenzene				2.0	106	70	130			
Surr: Toluene-d8				2.0	101	70	130			
Sample ID: H11100280-002DMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_111031A			10/31/11 21:13	
Acetone		120	ug/L	40	120	70	130	16	20	
Acrylonitrile		106	ug/L	40	106	70	130	4.4	20	
Benzene		11.0	ug/L	2.0	110	70	130	6.0	20	
Bromochloromethane		10.7	ug/L	2.0	107	70	130	6.2	20	
Bromodichloromethane		10.7	ug/L	2.0	107	70	130	3.8	20	
Bromoform		8.40	ug/L	2.0	84	70	130	2.8	20	
Bromomethane		8.16	ug/L	2.0	82	70	130	54	20	R
Carbon disulfide		13.0	ug/L	2.0	130	70	130	1.9	20	
Carbon tetrachloride		10.6	ug/L	2.0	106	70	130	5.4	20	
Chlorobenzene		9.76	ug/L	2.0	98	70	130	1.7	20	
Chlorodibromomethane		8.56	ug/L	2.0	86	70	130	0.9	20	
Chloroethane		10.4	ug/L	2.0	104	70	130	9.5	20	
Chloroform		11.0	ug/L	2.0	110	70	130	4.4	20	
Chloromethane		11.9	ug/L	2.0	119	70	130	9.1	20	
1,2-Dibromo-3-chloropropane		10.5	ug/L	2.0	105	70	130	2.3	20	
1,2-Dibromoethane		9.36	ug/L	2.0	94	70	130	6.2	20	
Dibromomethane		8.48	ug/L	2.0	85	70	130	4.8	20	
1,2-Dichlorobenzene		10.5	ug/L	2.0	105	70	130	5.5	20	
1,4-Dichlorobenzene		10.4	ug/L	2.0	104	70	130	5.5	20	
trans-1,4-Dichloro-2-butene		10.8	ug/L	2.0	108	70	130	8.5	20	
Dichlorodifluoromethane		10.7	ug/L	2.0	107	70	130	3.0	20	
1,1-Dichloroethane		12.5	ug/L	2.0	125	70	130	6.6	20	
1,2-Dichloroethane		9.92	ug/L	2.0	99	70	130	0.8	20	
1,1-Dichloroethene		11.1	ug/L	2.0	111	70	130	6.7	20	
cis-1,2-Dichloroethene		11.1	ug/L	2.0	111	70	130	5.2	20	
trans-1,2-Dichloroethene		11.2	ug/L	2.0	112	70	130	1.4	20	
1,2-Dichloropropane		11.6	ug/L	2.0	116	70	130	4.9	20	
cis-1,3-Dichloropropene		10.6	ug/L	2.0	106	70	130	4.7	20	
trans-1,3-Dichloropropene		9.76	ug/L	2.0	98	70	130	3.3	20	
Ethylbenzene		11.0	ug/L	2.0	110	70	130	2.2	20	
2-Hexanone		110	ug/L	40	110	70	130	8.3	20	
Iodomethane		7.88	ug/L	2.0	79	70	130	1.2	20	
Methyl ethyl ketone		110	ug/L	40	110	70	130	6.7	20	
Methyl isobutyl ketone		110	ug/L	40	110	70	130	16	20	
Methylene chloride		10.0	ug/L	2.0	100	70	130	3.3	20	
Styrene		10.4	ug/L	2.0	104	70	130	5.5	20	
1,1,1,2-Tetrachloroethane		9.76	ug/L	2.0	98	70	130	5.0	20	
1,1,2,2-Tetrachloroethane		10.5	ug/L	2.0	105	70	130	2.3	20	
Tetrachloroethene		9.68	ug/L	2.0	97	70	130	6.8	20	

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill

Report Date: 11/01/11
Work Order: H11100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R75754	
Sample ID: H11100280-002DMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_111031A			10/31/11 21:13	
Toluene		10.8	ug/L	2.0	108	70	130	4.5	20	
1,1,1-Trichloroethane		11.0	ug/L	2.0	110	70	130	5.2	20	
1,1,2-Trichloroethane		9.76	ug/L	2.0	98	70	130	4.2	20	
Trichloroethene		9.68	ug/L	2.0	97	70	130	3.4	20	
Trichlorofluoromethane		11.2	ug/L	2.0	112	70	130	0.7	20	
1,2,3-Trichloropropane		8.96	ug/L	2.0	90	70	130	2.7	20	
Vinyl acetate		12.7	ug/L	2.0	127	70	130	7.8	20	
Vinyl chloride		11.1	ug/L	2.0	111	70	130	3.7	20	
m+p-Xylenes		18.1	ug/L	2.0	90	70	130	1.8	20	
o-Xylene		9.52	ug/L	2.0	95	70	130	4.3	20	
Xylenes, Total		27.6	ug/L	2.0	92	70	130	0.3	20	
Surr: 1,2-Dichloroethane-d4				2.0	115	70	130	0.0	20	
Surr: Dibromofluoromethane				2.0	99	70	130	0.0	20	
Surr: p-Bromofluorobenzene				2.0	102	70	130	0.0	20	
Surr: Toluene-d8				2.0	104	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

MT-DEQ Solid Waste Section

H11100280

Login completed by: Wanda Johnson
Date Received: 10/19/2011
Reviewed by: BL2000\ablackburn
Received by: elm
Reviewed Date: 10/26/2011
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Container/Temp Blank temperature:	2.4°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

Contacted client regarding which metals to analyze for. Wj 10/19/11 Client stated to analyze same as historically for the dissolved metals on the 4 samples that are not listed on the COC. Wj 10/20/11

ENERGY

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
MT DEQ Solid Waste Section	Mistic M Landfill	State: MT	Yes ☒ No ☐
Report Mail Address:	**Contact Name:** / **Phone/Fax:**	**Email:**	**Sampler: (Please Print)**
PO Box 200901, Helena, MT 59620	Martin Van Oort 444-2802	mvanoort@mt.gov	Martin Van Oort
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
Same	Same		8557

Special Report/Formats:

- ☐ DW
- ☐ POTW/WWTP
- ☒ State: Solid Waste
- ☐ Other: _____
- ☐ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

ANALYSIS REQUESTED

Standard Turnaround (TAT) | RUSH | SEE ATTACHED

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand
Cooler ID(s): 4
Receipt Temp 2.4 °C
On Ice: Y N
Custody Seal: On Bottle Y N; On Cooler Y N; Intact Y N
Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	8260 VOCs	Sulfate, Chloride, pH, SC	Nitrate/Nitrite	Dissolved metals (all)	Dissolved metals (Fe & Zn)							
1 MrM-MW-11	10/17/11	1510	W	X	X	X	X								
2 MrM-MW-11-DUP	10/17/11	1515	W	X	X	X	X								
3 MrM-MW-9R	10/18/11	810	W	X	X	X									
4 MrM-MW-OW	↓	1035	W	X	X			X							
5 MrM-MW-12	↓	1455	W	X	X	X	X								
6 MrM-MW-HW	↓	1605	W	X	X	X	X								
7 Trip Blank	10/17/11	—	W	X											
8															
9															
10															

LABORATORY USE ONLY #11100280

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Martin Van Oort	10/19/11 1205	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory:	Date/Time:	Signature:
			[illegible]	10-19-11 12:05	[signature]

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

APPENDIX D: LABORATORY ANALYTICAL REPORT

ANALYTICAL SUMMARY REPORT

November 01, 2011

MT-DEQ Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H11100280

Project Name: Mister M Landfill

Energy Laboratories Inc Helena MT received the following 7 samples for MT-DEQ Solid Waste Section on 10/19/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H11100280-001	MrM-MW-11	10/17/11 15:10	10/19/11	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H11100280-002	MrM-MW-11-Dup	10/17/11 15:15	10/19/11	Aqueous	Same As Above
H11100280-003	MrM-MW-9R	10/18/11 8:10	10/19/11	Aqueous	Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H11100280-004	MrM-MW-OW	10/18/11 10:35	10/19/11	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H11100280-005	MrM-MW-12	10/18/11 14:55	10/19/11	Aqueous	Metals by ICP/ICPMS, Dissolved Conductivity Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite pH 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H11100280-006	MrM-MW-HW	10/18/11 16:05	10/19/11	Aqueous	Same As Above
H11100280-007	Trip Blank 0928/11EMHCL 1618 041811-3	10/17/11 15:10	10/19/11	Trip Blank	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

ANALYTICAL SUMMARY REPORT

Report Approved By: Wanda Johnson

Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2011.11.03 09:00:38 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-001
Client Sample ID MrM-MW-11

Report Date: 11/01/11
Collection Date: 10/17/11 15:10
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.0	s.u.		0.1		A4500-H B	10/19/11 17:12 / cmm
Conductivity	620	umhos/cm		1		A2510 B	10/19/11 14:45 / cmm
INORGANICS							
Chloride	2	mg/L		1		E300.0	10/20/11 18:53 / zeg
Sulfate	38	mg/L		1		E300.0	10/20/11 18:53 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/26/11 13:04 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		SW6020	10/23/11 17:17 / dck
Arsenic	ND	mg/L		0.005		SW6020	10/23/11 17:17 / dck
Barium	ND	mg/L		0.1		SW6020	10/23/11 17:17 / dck
Beryllium	ND	mg/L		0.001		SW6020	10/23/11 17:17 / dck
Cadmium	ND	mg/L		0.001		SW6020	10/23/11 17:17 / dck
Chromium	ND	mg/L		0.01		SW6020	10/23/11 17:17 / dck
Cobalt	ND	mg/L		0.01		SW6020	10/23/11 17:17 / dck
Copper	ND	mg/L		0.01		SW6020	10/23/11 17:17 / dck
Iron	0.22	mg/L		0.03		SW6020	10/23/11 17:17 / dck
Lead	ND	mg/L		0.01		SW6020	10/23/11 17:17 / dck
Nickel	ND	mg/L		0.01		SW6020	10/23/11 17:17 / dck
Selenium	ND	mg/L		0.005		SW6020	10/23/11 17:17 / dck
Silver	ND	mg/L		0.005		SW6020	10/23/11 17:17 / dck
Thallium	ND	mg/L		0.005		SW6020	10/23/11 17:17 / dck
Vanadium	ND	mg/L		0.1		SW6020	10/23/11 17:17 / dck
Zinc	ND	mg/L		0.01		SW6020	10/23/11 17:17 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/31/11 15:25 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/31/11 15:25 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-001
Client Sample ID MrM-MW-11

Report Date: 11/01/11
Collection Date: 10/17/11 15:10
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/31/11 15:25 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/11 15:25 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/11 15:25 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/31/11 15:25 / abb
Surr: 1,2-Dichloroethane-d4	118	%REC		70-130		SW8260B	10/31/11 15:25 / abb
Surr: Dibromofluoromethane	113	%REC		70-130		SW8260B	10/31/11 15:25 / abb
Surr: p-Bromofluorobenzene	104	%REC		70-130		SW8260B	10/31/11 15:25 / abb
Surr: Toluene-d8	98.0	%REC		70-130		SW8260B	10/31/11 15:25 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-002
Client Sample ID MrM-MW-11-Dup

Report Date: 11/01/11
Collection Date: 10/17/11 15:15
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.0	s.u.		0.1		A4500-H B	10/19/11 17:20 / cmm
Conductivity	623	umhos/cm		1		A2510 B	10/19/11 14:46 / cmm
INORGANICS							
Chloride	2	mg/L		1		E300.0	10/20/11 19:34 / zeg
Sulfate	38	mg/L		1		E300.0	10/20/11 19:34 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/26/11 13:07 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		SW6020	10/23/11 17:44 / dck
Arsenic	ND	mg/L		0.005		SW6020	10/23/11 17:44 / dck
Barium	ND	mg/L		0.1		SW6020	10/23/11 17:44 / dck
Beryllium	ND	mg/L		0.001		SW6020	10/23/11 17:44 / dck
Cadmium	ND	mg/L		0.001		SW6020	10/23/11 17:44 / dck
Chromium	ND	mg/L		0.01		SW6020	10/23/11 17:44 / dck
Cobalt	ND	mg/L		0.01		SW6020	10/23/11 17:44 / dck
Copper	ND	mg/L		0.01		SW6020	10/23/11 17:44 / dck
Iron	0.19	mg/L		0.03		SW6020	10/23/11 17:44 / dck
Lead	ND	mg/L		0.01		SW6020	10/23/11 17:44 / dck
Nickel	ND	mg/L		0.01		SW6020	10/23/11 17:44 / dck
Selenium	ND	mg/L		0.005		SW6020	10/23/11 17:44 / dck
Silver	ND	mg/L		0.005		SW6020	10/23/11 17:44 / dck
Thallium	ND	mg/L		0.005		SW6020	10/23/11 17:44 / dck
Vanadium	ND	mg/L		0.1		SW6020	10/23/11 17:44 / dck
Zinc	ND	mg/L		0.01		SW6020	10/23/11 17:44 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/31/11 15:57 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/31/11 15:57 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-002
Client Sample ID MrM-MW-11-Dup

Report Date: 11/01/11
Collection Date: 10/17/11 15:15
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/31/11 15:57 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/11 15:57 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/11 15:57 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/31/11 15:57 / abb
Surr: 1,2-Dichloroethane-d4	123	%REC		70-130		SW8260B	10/31/11 15:57 / abb
Surr: Dibromofluoromethane	113	%REC		70-130		SW8260B	10/31/11 15:57 / abb
Surr: p-Bromofluorobenzene	108	%REC		70-130		SW8260B	10/31/11 15:57 / abb
Surr: Toluene-d8	99.0	%REC		70-130		SW8260B	10/31/11 15:57 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-003
Client Sample ID MrM-MW-9R

Report Date: 11/01/11
Collection Date: 10/18/11 08:10
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.4	s.u.		0.1		A4500-H B	10/19/11 17:27 / cmm
Conductivity	994	umhos/cm		1		A2510 B	10/19/11 14:46 / cmm
INORGANICS							
Chloride	28	mg/L		1		E300.0	10/20/11 19:47 / zeg
Sulfate	56	mg/L		1		E300.0	10/20/11 19:47 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.93	mg/L		0.01		E353.2	10/26/11 13:09 / reh
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/31/11 16:29 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/31/11 16:29 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Dichlorodifluoromethane	0.40	ug/L	J	1.0		SW8260B	10/31/11 16:29 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
cis-1,2-Dichloroethene	15	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/31/11 16:29 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-003
Client Sample ID MrM-MW-9R

Report Date: 11/01/11
Collection Date: 10/18/11 08:10
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/11 16:29 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/11 16:29 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Tetrachloroethene	0.84	ug/L	J	1.0		SW8260B	10/31/11 16:29 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Trichloroethene	0.45	ug/L	J	1.0		SW8260B	10/31/11 16:29 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/31/11 16:29 / abb
Surr: 1,2-Dichloroethane-d4	112	%REC		70-130		SW8260B	10/31/11 16:29 / abb
Surr: Dibromofluoromethane	104	%REC		70-130		SW8260B	10/31/11 16:29 / abb
Surr: p-Bromofluorobenzene	102	%REC		70-130		SW8260B	10/31/11 16:29 / abb
Surr: Toluene-d8	101	%REC		70-130		SW8260B	10/31/11 16:29 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-004
Client Sample ID MrM-MW-OW

Report Date: 11/01/11
Collection Date: 10/18/11 10:35
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.0	s.u.		0.1		A4500-H B	10/19/11 17:34 / cmm
Conductivity	676	umhos/cm		1		A2510 B	10/19/11 14:47 / cmm
INORGANICS							
Chloride	5	mg/L		1		E300.0	10/20/11 20:01 / zeg
Sulfate	30	mg/L		1		E300.0	10/20/11 20:01 / zeg
METALS, DISSOLVED							
Iron	1.22	mg/L		0.03		SW6020	10/23/11 17:50 / dck
Zinc	1.03	mg/L		0.01		SW6020	10/23/11 17:50 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/31/11 17:00 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/31/11 17:00 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Carbon disulfide	1.2	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
cis-1,2-Dichloroethene	5.7	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/31/11 17:00 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-004
Client Sample ID MrM-MW-OW

Report Date: 11/01/11
Collection Date: 10/18/11 10:35
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/11 17:00 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/11 17:00 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Styrene	0.40	ug/L	J	1.0		SW8260B	10/31/11 17:00 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/31/11 17:00 / abb
Surr: 1,2-Dichloroethane-d4	129	%REC		70-130		SW8260B	10/31/11 17:00 / abb
Surr: Dibromofluoromethane	108	%REC		70-130		SW8260B	10/31/11 17:00 / abb
Surr: p-Bromofluorobenzene	105	%REC		70-130		SW8260B	10/31/11 17:00 / abb
Surr: Toluene-d8	99.0	%REC		70-130		SW8260B	10/31/11 17:00 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-005
Client Sample ID MrM-MW-12

Report Date: 11/01/11
Collection Date: 10/18/11 14:55
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.7	s.u.		0.1		A4500-H B	10/19/11 17:42 / cmm
Conductivity	663	umhos/cm		1		A2510 B	10/19/11 14:47 / cmm
INORGANICS							
Chloride	4	mg/L		1		E300.0	10/20/11 20:14 / zeg
Sulfate	31	mg/L		1		E300.0	10/20/11 20:14 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.03	mg/L		0.01		E353.2	10/26/11 13:10 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		SW6020	10/23/11 17:57 / dck
Arsenic	ND	mg/L		0.005		SW6020	10/23/11 17:57 / dck
Barium	ND	mg/L		0.1		SW6020	10/23/11 17:57 / dck
Beryllium	ND	mg/L		0.001		SW6020	10/23/11 17:57 / dck
Cadmium	ND	mg/L		0.001		SW6020	10/23/11 17:57 / dck
Chromium	ND	mg/L		0.01		SW6020	10/23/11 17:57 / dck
Cobalt	ND	mg/L		0.01		SW6020	10/23/11 17:57 / dck
Copper	ND	mg/L		0.01		SW6020	10/23/11 17:57 / dck
Iron	0.59	mg/L		0.03		SW6020	10/23/11 17:57 / dck
Lead	ND	mg/L		0.01		SW6020	10/23/11 17:57 / dck
Nickel	ND	mg/L		0.01		SW6020	10/23/11 17:57 / dck
Selenium	ND	mg/L		0.005		SW6020	10/23/11 17:57 / dck
Silver	ND	mg/L		0.005		SW6020	10/23/11 17:57 / dck
Thallium	ND	mg/L		0.005		SW6020	10/23/11 17:57 / dck
Vanadium	ND	mg/L		0.1		SW6020	10/23/11 17:57 / dck
Zinc	ND	mg/L		0.01		SW6020	10/23/11 17:57 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/31/11 17:32 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/31/11 17:32 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-005
Client Sample ID MrM-MW-12

Report Date: 11/01/11
Collection Date: 10/18/11 14:55
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/31/11 17:32 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/11 17:32 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/11 17:32 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/31/11 17:32 / abb
Surr: 1,2-Dichloroethane-d4	119	%REC		70-130		SW8260B	10/31/11 17:32 / abb
Surr: Dibromofluoromethane	113	%REC		70-130		SW8260B	10/31/11 17:32 / abb
Surr: p-Bromofluorobenzene	104	%REC		70-130		SW8260B	10/31/11 17:32 / abb
Surr: Toluene-d8	100	%REC		70-130		SW8260B	10/31/11 17:32 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-006
Client Sample ID MrM-MW-HW

Report Date: 11/01/11
Collection Date: 10/18/11 16:05
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.8	s.u.		0.1		A4500-H B	10/19/11 17:49 / cmm
Conductivity	754	umhos/cm		1		A2510 B	10/19/11 14:48 / cmm
INORGANICS							
Chloride	7	mg/L		1		E300.0	10/20/11 20:28 / zeg
Sulfate	30	mg/L		1		E300.0	10/20/11 20:28 / zeg
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L		0.01		E353.2	10/26/11 13:11 / reh
METALS, DISSOLVED							
Antimony	ND	mg/L		0.005		SW6020	10/23/11 18:04 / dck
Arsenic	ND	mg/L		0.005		SW6020	10/23/11 18:04 / dck
Barium	ND	mg/L		0.1		SW6020	10/23/11 18:04 / dck
Beryllium	ND	mg/L		0.001		SW6020	10/23/11 18:04 / dck
Cadmium	ND	mg/L		0.001		SW6020	10/23/11 18:04 / dck
Chromium	ND	mg/L		0.01		SW6020	10/23/11 18:04 / dck
Cobalt	ND	mg/L		0.01		SW6020	10/23/11 18:04 / dck
Copper	ND	mg/L		0.01		SW6020	10/23/11 18:04 / dck
Iron	ND	mg/L		0.03		SW6020	10/23/11 18:04 / dck
Lead	ND	mg/L		0.01		SW6020	10/23/11 18:04 / dck
Nickel	ND	mg/L		0.01		SW6020	10/23/11 18:04 / dck
Selenium	ND	mg/L		0.005		SW6020	10/23/11 18:04 / dck
Silver	ND	mg/L		0.005		SW6020	10/23/11 18:04 / dck
Thallium	ND	mg/L		0.005		SW6020	10/23/11 18:04 / dck
Vanadium	ND	mg/L		0.1		SW6020	10/23/11 18:04 / dck
Zinc	0.02	mg/L		0.01		SW6020	10/23/11 18:04 / dck
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/31/11 18:03 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/31/11 18:03 / abb
Benzene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Bromoform	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Chloroform	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT-DEQ Solid Waste Section
Project: Mister M Landfill
Lab ID: H11100280-006
Client Sample ID MrM-MW-HW

Report Date: 11/01/11
Collection Date: 10/18/11 16:05
DateReceived: 10/19/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Chloromethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/31/11 18:03 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/31/11 18:03 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/31/11 18:03 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Styrene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Toluene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	10/31/11 18:03 / abb
Surr: 1,2-Dichloroethane-d4	120	%REC		70-130		SW8260B	10/31/11 18:03 / abb
Surr: Dibromofluoromethane	109	%REC		70-130		SW8260B	10/31/11 18:03 / abb
Surr: p-Bromofluorobenzene	107	%REC		70-130		SW8260B	10/31/11 18:03 / abb
Surr: Toluene-d8	98.0	%REC		70-130		SW8260B	10/31/11 18:03 / abb

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

APPENDIX E: HISTORICAL GROUNDWATER QUALITY

		General Chemistry (mg/l)							Metals (mg/l)																
Well	Date	pH (std units)	SC (umhos/cm)	Chloride	Sulfate	Nitrate + Nitrite	COD	Cyanide	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-1	8/10/93	7.5	544	16	75	0.77	27			<0.005	0.1		<0.001	<0.01			<0.03	<0.01	<0.001		<0.005	<0.005			
	12/8/95																								
	3/30/96	7.2	789	19	34	0.53	1	<0.005	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	0.08	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.02
	11/21/03	7.6	684	13	28			<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.3	716	9	30	1.62	8	<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	11/10/06	7.6	775	13	25	2.42	6	<0.005	<0.01	<0.005	0.29	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	6/28/07	7.5	7.81	19	24	1.49	10	<0.005	<0.01	<0.005	0.24	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
	1/22/09	7.5	805	19	23	1.90	5		<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
MW-2	8/10/93	6.9	823	47	52	<0.05	57			<0.005	0.2		<0.001	<0.01			<0.03	<0.01	<0.001		<0.005	<0.005			
	6/28/07	7.3	946	54	60	0.21	13	<0.005	<0.01	<0.005	0.14	<0.001	<0.0005	<0.002	<0.005	0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-4	8/10/93	7.8	721	28	51	0.43	40			<0.005	0.2		0.003	<0.01			<0.01	0.03	<0.001		<0.005	<0.005			
	11/21/03	7.8	670	16	59	2.81	22	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
MW-5	11/21/03	7.7	718	5	68	2.72	38	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.054	<0.005	<0.1	<0.1	<0.01
	8/19/04	7.9	926	10	100	2.81	2	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.055	<0.005	<0.1	<0.1	0.02
	11/30/05	7.4	841	11	46	1.96	100	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.058	<0.005	<0.1	<0.1	<0.01
	11/9/06	7.6	969	5	43	2.66	4	<0.005	<0.01	<0.005	0.11	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	0.184	<0.0002	<0.01	<0.05	<0.01
	6/27/07	7.7	937	7	50	1.89	22	<0.005	<0.01	<0.005	0.11	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	0.124	<0.0002	<0.01	<0.05	<0.01
	12/19/07	7.6	880	9	49	1.70	4																		
	6/3/09	7.6	1020	14	55	2.12	7	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.111	<0.005	<0.1	<0.1	<0.01
MW-6	6/27/07	7.6	1040	5	56	0.18	6	<0.005	<0.01	<0.005	0.15	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-6M	8/20/04	7.9	388	4	20	1.68	2	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.06
MW-7	12/8/95																								
	3/30/96	6.8	942	34	40	<0.05	<1	<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	0.28	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.10	0.02
MW-7R	6/28/07	7.3	1350	80	157	2.10	14	<0.005	<0.01	<0.005	0.05	<0.001	<0.0005	<0.002	<0.005	0.002	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01
MW-8	11/21/03	7.3	743	17	38	1.03	120	<0.005	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.4	746	10	50	2.64	8	<0.005	<0.05	<0.005	0.2	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.08
MW-9	12/8/95																								
	3/30/96	7.4	734	13	26	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	0.05	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.03
MW-9R	10/24/97	7.7	814	14	99	4.74	6	<0.005	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
	8/20/04	7.6	760	10	90	5.58	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	6/2/09	7.5	952	24	75	3.47	7	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.0	922	14	82	4.04	4	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	<0.01
	10/26/10	8.1	896	17	68	2.95			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/11	7.2	882	25	36	1.52			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/23/11	7.2	892	25	36	1.52			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/18/11	7.4	994	28	56	0.93																			
MW-10	11/14/94	7.5	684	47	30	<0.05	6	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.02
	12/29/94																								
	5/25/95	8.0	668	45	25	<0.05	11	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.05	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.06
	12/8/95	7.4	646	15	30	<0.05	10	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.08
	3/30/96	7.4	647	6	25	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.2	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.03
MW-10R	10/24/97	7.6	1100	23	111	2.01	10	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.04	<0.01	<0.001	<0.01	0.034	<0.005	<0.1	<0.1	<0.01
	6/29/98	7.5	1130	18	99	1.7	7	<0.005	0.04J	0.004J	<0.1	0.0009J	<0.001	<0.01	<0.01	<0.01	0.14	<0.01	<0.001	<0.01	0.091	<0.005	<0.1	<0.1	0.02

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		General Chemistry (mg/l)							Metals (mg/l)																	
Well	Date	pH (std units)	SC (umhos/cm)	Chloride	Sulfate	Nitrate + Nitrite	COD	Cyanide	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-10R	11/17/98	7.5	947	19	113	2.18	12	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.093	<0.005	<0.1	<0.1	<0.01J
(cont.)	5/4/99	7.7	1070	19	104	1.85	<1	<0.005	<0.05	0.008	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.35	<0.01	<0.001	<0.01	0.101	<0.005	<0.1	<0.1	0.02
	12/3/99	7.3	1070	14	112	2.01	8	<0.005	<0.05	<0.005J	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.07	<0.01	<0.001	<0.01	0.114	<0.005	<0.1	<0.1	<0.01
	8/20/04	7.7	970	10	100	2.39	2	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.050	<0.005	<0.1	<0.1	0.07
	1/22/09	7.8	1080	17	89	1.63	4	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.060	<0.005	<0.1	<0.1	<0.01
	6/2/09	7.7	1020	23	82	1.42	3	<0.005	<0.05	<0.005	<0.1	<0.001	0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.011	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.0	1080	17	88	1.82	3	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.081	<0.005	<0.1	<0.1	<0.01
	10/27/09	8.2	1080	17	88	1.95	3	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.071	<0.005	<0.1	<0.1	<0.01
MW-11	10/26/10	8.2	655	3	42	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.11	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/24/11	7.7	612	3	38	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.18	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/17/11	8.0	620	2	38	<0.01			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.22	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/17/11	8.0	623	2	38	<0.01			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.19	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
MW-11M	8/20/04	7.3	1110	20	70	2.36	<1	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.08
MW-12	10/27/10	8.1	683	5	35	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.31	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/27/10	8.1	698	4	33	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.30	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	5/25/11	7.4	668	5	31	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.53	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
	10/18/11	7.7	663	4	31	0.03			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.59	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	<0.01
MW-13	10/24/97	7.9	441	<1	80	0.15	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
MW-OW	11/14/94	7.3	771	29	29	<0.05	5	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.57	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.15
	12/29/94																								
	5/25/95	7.8	721	4	33	<0.05	3	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.58	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.08
	12/8/95	7.3	718	4	37	<0.05	6	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.10	0.09
	3/30/96	7.4	732	5	29	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	1.01	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.13
	10/24/97	7.6	691	6	37	<0.05	3	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.57	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.1	0.05
	6/29/98	7.3	714	9	34	<0.05	4	<0.005	<0.05	<0.005	0.07J	<0.001	<0.001	<0.01	<0.01	<0.01	1.01	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.12
	11/17/98	7.5	757	119	15	<0.05	20	<0.005	<0.05	<0.005J	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.00	<0.01	<0.001	0.03	<0.005	<0.005	<0.1	<0.1	0.30
	5/4/99	7.7	687	7	34	<0.05	<1	<0.005	<0.05	<0.005	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.68	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.1	0.06
	12/2/99	7.4	675	4	36	<0.05	4	<0.005	<0.05	<0.005	<0.1J	<0.001	<0.001	<0.01	<0.01	<0.01	0.73	<0.01	<0.001	0.01	<0.005	<0.005	<0.1	<0.1	0.03
	8/20/04	7.5	794	10	90	<0.05	30	<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.68
	8/20/04	7.5	802	10	100	<0.05	28	<0.005	<0.05	<0.005	0.2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.64
	11/10/06	7.7	718	22	27	<0.02	4	<0.005	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	0.31	<0.002	<0.0002	0.01	<0.005	<0.0002	<0.01	<0.05	0.36
	6/28/07	7.7	692	10	36	<0.01	2	<0.005	<0.01	<0.005	0.07	<0.001	<0.0005	<0.002	<0.005	<0.001	0.41	<0.002	<0.0002	0.01	<0.005	<0.0002	<0.01	<0.05	0.16
	12/18/07	7.5	669	47	2	<0.01	9	<0.005	<0.01	<0.005	0.09	<0.001	<0.0005	<0.002	<0.005	<0.001	3.79	<0.002	<0.0002	0.01	<0.005	<0.0002	<0.01	<0.05	3.17
	1/21/09	7.8	678	49	<1	<0.05	11	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.87	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.29
	6/1/09	7.6	654	51	<1	<0.05	9	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.47	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.48
	6/1/09	7.7	649	51	<1	<0.05	8	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.47	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.48
	6/5/09																								
	10/26/09	8.1	683	14	18	<0.05	8	<0.005	<0.05	<0.005	0.1	<0.001	<0.001	<0.01	<0.01	<0.01	2.38	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.04
	10/25/10	8.2	646	17	5	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.81	<0.01	<0.001	<0.01	<0.005	<0.005	<0.005	<0.1	0.46
	5/24/11	7.8	739	54	17	<0.05			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.86	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	1.28
	10/18/11	8.0	676	5	30												1.22								1.03
MW-HW	6/10/80	7.6	848	2.5	107								<0.002	0.007		0.013	0.75	<0.04		0.01		0.006		0.007	0.04
	11/14/94	7.1	815	3	100	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.14	<0.01	<0.001	<0.1	<0.005	<0.005	<0.1	<0.10	0.04
	5/25/95	7.8	780	8	38	0.12	2	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.1	<0.005	<0.005	<0.1	<0.10	0.02

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		General Chemistry (mg/l)							Metals (mg/l)																	
Well	Date	pH (std units)	SC (umhos/cm)	Chloride	Sulfate	Nitrate + Nitrite	COD	Cyanide	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
MW-HW (cont.)	12/8/95	7.2	786	4	75	<0.05	9	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.10	0.05
	3/30/96	7.4	796	8	29	0.44	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	0.005	<0.005	<0.1	<0.10	0.04
	10/24/97	7.4	779	4	83	<0.05	2	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	6/29/98	7..3	723	7	55	<0.05	4	<0.005	<0.05	<0.005	0.06J	<0.001	<0.001	<0.01	<0.01	<0.01	0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.05
	11/17/98	7.2	668	4	87	<0.05	2	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.52	<0.01	<0.001	<0.01J	<0.005	<0.005	<0.1	<0.1	0.04
	5/4/99	7.6	755	4	87	0.15	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.25	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.04
	12/2/99	7.2	763	4	105	<0.05	4	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	0.34	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	8/20/04	7.6	705	10	40	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	11/29/05	7.4	676	5	78	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	11/29/05	7.4	700	6	77	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.01
	11/10/06	7.5	753	9	35	<0.05	<1	<0.005	<0.01	<0.005	0.06	<0.001	<0.0005	<0.002	<0.005	0.001	0.28	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	0.03
	6/28/07	7.7	756	10	36	0.17	1	<0.005	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	0.010	<0.0002	<0.01	<0.05	<0.01
	12/18/07	7.4	756	9	36	0.01	<1	<0.005	<0.01	<0.005	0.08	<0.001	<0.0005	<0.002	<0.005	<0.001	<0.03	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	0.02
	1/21/09	7.5	837	8	34	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.03
	6/1/09	7.5	773	10	37	0.17	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.02
	10/26/09	8.0	795	8	36	<0.05	<1	<0.005	<0.05	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01	<0.001	<0.01	<0.005	<0.005	<0.1	<0.1	0.1
	5/24/11	7.7	749	9	28	0.13			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	0.03
	10/18/11	7.8	754	7	30	0.01			<0.005	<0.005	<0.1	<0.001	<0.001	<0.01	<0.01	<0.01	<0.03	<0.01		<0.01	<0.005	<0.005	<0.005	<0.1	0.02
Richards	6/28/07	7.9	645	5	47	<0.01	<1	<0.005	<0.01	<0.005	0.07	<0.001	<0.0005	<0.002	<0.005	<0.001	0.14	<0.002	<0.0002	<0.01	<0.005	<0.0002	<0.01	<0.05	<0.01

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																										
		Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
MW-1	8/10/93			<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0				<1.0	<1.0	<1.0	<1.0		<1.0
	12/8/95	<25.0	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00		<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
	3/30/96	43J	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/21/03	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	8/20/04	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/10/06	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/28/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1/22/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-2	8/10/93			<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0				<1.0	<1.0	<1.0	<1.0		<1.0
	6/28/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.49J	<1.0
MW-4	8/10/93			<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0				<1.0	<1.0	<1.0	<1.0		<1.0
	11/21/03	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.59J	<1.0	<1.0	<1.0	2.0	<1.0
MW-5	11/21/03	29	<20	22	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	8/19/04	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/30/05	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.19J	<1.0	<1.0	<1.0	<1.0	<1.0
	11/9/06	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22J	<1.0	<1.0	<1.0	<1.0	<1.0
	6/27/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/19/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/3/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-6	6/27/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-6M	8/20/04	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	12/8/95	<25.0	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00		<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
	3/30/96	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0
MW-7R	6/28/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-8	11/21/03	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	8/20/04	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	12/8/95	<25.0	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00		<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
	3/30/96	73	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0
MW-9R	10/24/97	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	0.28J	<1.0	<1.0	<1.0	1.1	<1.0
	8/20/04	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.34J	<1.0	<1.0	<1.0	0.32J	<1.0
	6/2/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.8	<1.0
	10/27/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0
	10/26/10	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.8	<1.0
	5/23/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.54J	<1.0	<1.0	<1.0	18	<1.0
	5/23/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.52J	<1.0	<1.0	<1.0	18	<1.0
	10/18/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.40J	<1.0	<1.0	<1.0	15	<1.0
MW-10	11/14/94	<50	<20	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	1.9	0.32J	<1.0	<1.0	22	<1.0
	12/29/94			<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/25/95	34J	<20	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	2.5	0.32J	<1.0	<1.0	45	<1.0
	12/8/95	<50	<20	0.35J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	0.27J	<1.0	<1.0	<1.0	4.0	<1.0
	3/30/96	43J	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0
MW-10R	10/24/97	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	0.35J	<1.0	<1.0	<1.0	<1.0	<1.0
	6/29/98	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																										
		Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
MW-10R (cont.)	11/17/98	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/4/99	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/3/99	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	8/20/04	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1/22/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/2/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/27/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/27/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	10/26/10	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/24/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/17/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/17/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11M	8/20/04	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	0.36J	<1.0	<1.0	0.41J	<1.0
MW-12	10/27/10	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.57J	<1.0
	10/27/10	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.62J	<1.0
	5/25/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.14J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.80J	<1.0
	10/18/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-13	10/24/97	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-OW	11/14/94	<50	<20	0.82J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	1.1	<1.0	<1.0	<1.0	37	<1.0
	12/29/94			<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	0.73	<0.50
	5/25/95	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0
	12/8/95	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/30/96	69	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	3.3	<1.0
	10/24/97	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	3.0	<1.0
	6/29/98	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	8.6	<1.0
	11/17/98	<50	<20	2.4	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	3.8	0.38J	<1.0	<1.0	148	0.21J
	5/4/99	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0
	12/2/99	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0
	8/20/04	<20	<20	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.92J	0.25J	<1.0	<1.0	78	0.20J
	8/20/04	<20	<20	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.89J	0.24J	<1.0	<1.0	77	0.17J
	11/10/06	<20	<20	0.38J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.18J	<1.0	<1.0	<1.0	27	<1.0
	6/28/07	<20	<20	0.14J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.0	<1.0
	12/18/07	<20	<20	1.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	62	0.29J
	1/21/09	<20	<20	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	33	<1.0
	6/1/09	<20	<20	0.61J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18	<1.0
	6/1/09	<20	<20	0.67J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18	<1.0
	6/5/09			1.2	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	46	<1.0
	10/26/09	<20	<20	0.89J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	22	<1.0
	10/25/10	<20	<20	0.74J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	20	<1.0
	5/24/11	<20	<20	1.2	0.45J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.20J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.17J	<1.0	30	<1.0
	10/18/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.7	<1.0
MW-HW	6/10/80																										
	11/14/94	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/25/95	29J	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		VOCs (ug/l)																										
Well	Date	Acetone	Acrylonitrile	Benzene	Bromochloro-methane	Bromodichloro-methane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromo-methane	Chloroethane	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	trans-1,4-Dichloro-2-butene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
MW-HW (cont.)	12/8/95	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/30/96	71	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/24/97	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/29/98	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/17/98	<50	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/4/99	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/2/99	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	8/20/04	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/29/05	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/29/05	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/10/06	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/28/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/18/07	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1/21/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/1/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/26/09	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/24/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/18/11	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Richards	6/28/07			<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		VOCs (ug/l)																							
Well	Date	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-1	8/10/93		<1.0	<1.0	<1.0		<1.0			<1.0	<1.0		<1.0	<1.0	1.2	<1.0J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0
	12/8/95	<5.00	<5.00	<5.00	<5.00	<25.0		<25.0	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00		<5.00	<5.00	<5.00	
	3/30/96	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	11/21/03	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	8/20/04	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.29J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/10/06	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<10	<1.0	<1.0	<1.0	<1.0	<1.0	0.29J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/28/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1/22/09	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-2	8/10/93		<1.0	<1.0	<1.0		<1.0			<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0
	6/28/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.55J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-4	8/10/93		<1.0	<1.0	<1.0		<1.0			<1.0	<1.0		<1.0	<1.0J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0
	11/21/03	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.66J	<1.0	<1.0	<1.0	0.26J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-5	11/21/03	<1.0	<1.0	<1.0	0.96J	<20	<1.0	<20	<20	<1.0	0.90J	<1.0	<1.0	<1.0	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	0.75J	
	8/19/04	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	7.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/30/05	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.22J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/9/06	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<10	<1.0	<1.0	<1.0	<1.0	<1.0	0.16J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.13J	<1.0	0.13J
	6/27/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.40J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.29J	<1.0	0.29J
	12/19/07	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.20J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/3/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-6	6/27/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.21J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-6M	8/20/04	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	3.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	12/8/95	<5.00	<5.00	<5.00	<5.00	<25.0		<25.0	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00		<5.00	<5.00	<5.00	
	3/30/96	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.21J	0.27J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.16J	<1.0	
MW-7R	6/28/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-8	11/21/03	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	0.22J	<1.0	<1.0	<1.0	<1.0	0.61J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.27J	<1.0	
	8/20/04	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.30J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	12/8/95	<5.00	<5.00	<5.00	<5.00	<25.0		<25.0	<25.0	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00		<5.00	<5.00	<5.00	
	3/30/96	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-9R	10/24/97	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.67J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	8/20/04	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.53J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/2/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	0.42J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/27/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.76J	<1.0	<1.0	<1.0	0.22J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/26/10	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.33J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/23/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	0.43J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/23/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	0.43J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/18/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.84J	<1.0	<1.0	<1.0	0.45J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	11/14/94	0.51J	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	1.5	<1.0	<1.0	<1.0	<1.0	0.57J	<1.0	<1.0	0.15J	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	
	12/29/94	<0.50	<0.50	<0.50	<0.50					<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50
	5/25/95	0.43J	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.27J	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	
	12/8/95	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	3/30/96	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.10J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-10R	10/24/97	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	6/29/98	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

		VOCs (ug/l)																							
Well	Date	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-10R (cont.)	11/17/98	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	5/4/99	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	12/3/99	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	8/20/04	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.92J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22J	<1.0	0.22J
	1/22/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/2/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/27/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.19J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/27/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.20J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11	10/26/10	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/24/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/17/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/17/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11M	8/20/04	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	0.29J	<1.0	<1.0	<1.0	0.99J	<1.0	<1.0	<1.0	0.23J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-12	10/27/10	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/27/10	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/25/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/18/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-13	10/24/97	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-OW	11/14/94	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.18J	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	
	12/29/94	<0.50	<0.50	<0.50	<0.50					<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50
	5/25/95	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	12/8/95	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	3/30/96	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.11J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	10/24/97	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	6/29/98	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	11/17/98	0.45J	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	0.38J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	4.6	<1.0	<1.0	
	5/4/99	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	12/2/99	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	8/20/04	0.26J	<1.0	<1.0	3.0	<20	<1.0	<20	<20	0.22J	2.0	<1.0	<1.0	<1.0	0.84J	<1.0	<1.0	0.41J	<1.0	<1.0	<1.0	2.6	0.65J	<1.0	0.65J
	8/20/04	0.25J	<1.0	<1.0	3.0	<20	<1.0	<20	<20	0.21J	2.1	<1.0	<1.0	<1.0	0.84J	<1.0	<1.0	0.43J	<1.0	<1.0	<1.0	2.6	0.64J	<1.0	0.64J
	11/10/06	<1.0	<1.0	<1.0	0.20J	<10	<1.0	<20	<10	<1.0	0.13J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22J	<1.0	<1.0	<1.0	0.75J	<1.0	<1.0	<1.0
	6/28/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.24J	<1.0	<1.0	<1.0
	12/18/07	0.18J	<1.0	<1.0	3.3	<20	<1.0	<20	<20	<1.0	4.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.67J	<1.0	<1.0	<1.0	1.7	0.64J	<1.0	0.64J
	1/21/09	<1.0	<1.0	<1.0	3.9	<20	<1.0	<20	<20	<1.0	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.26J	<1.0	<1.0	<1.0	0.73J	0.61J	<1.0	0.61J
	6/1/09	<1.0	<1.0	<1.0	0.39J	<20	<1.0	<20	<20	<1.0	0.61J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.16J	<1.0	<1.0	<1.0	0.48J	<1.0	<1.0	<1.0
	6/1/09	<1.0	<1.0	<1.0	0.30J	<20	<1.0	<20	<20	<1.0	0.55J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.16J	<1.0	<1.0	<1.0	0.46J	<1.0	<1.0	<1.0
	6/5/09	<1.0	<1.0	<1.0	2.3			<20		<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.19J	<1.0	<1.0		0.71J	0.40J	<1.0	0.40J
	10/26/09	<1.0	<1.0	<1.0	5.4	<20	<1.0	<20	<20	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.24J	<1.0	<1.0	<1.0	0.59J	0.61J	<1.0	0.61J
	10/25/10	<1.0	<1.0	<1.0	1.6	<20	<1.0	<20	<20	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.57J	0.41J	<1.0	0.41J
	5/24/11	<1.0	<1.0	<1.0	1.6	<20	<1.0	17J	<20	<1.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.23J	<1.0	<1.0	<1.0	0.76J	0.42J	<1.0	0.42J
	10/18/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	0.40J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-HW	6/10/80																								
	11/14/94	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	5/25/95	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	0.17J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Well	Date	VOCs (ug/l)																							
		1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethyl benzene	2-Hexanone	Iodomethane	Methyl ethyl ketone	Methyl isobutyl ketone	Methylene chloride	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichlororethane	1,1,2-Trichlororethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	Vinyl acetate	Vinyl chloride	m+p-Xylenes	o-Xylene	Xylenes, Total
MW-HW (cont.)	12/8/95	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	3/30/96	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	0.14J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	10/24/97	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	6/29/98	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	11/17/98	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	5/4/99	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	12/2/99	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	8/20/04	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/29/05	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/29/05	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	11/10/06	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/28/07	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/18/07	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	1/21/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/1/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/26/09	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	5/24/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/18/11	<1.0	<1.0	<1.0	<1.0	<20	<1.0	<20	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Richards	6/28/07	<0.50	<0.50	<0.50	<0.50					<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50

"J" = Estimated value.

Table E-1: Historical Groundwater Quality

Figure E-1: pH


Concentration (std. units)
9
8.5
8
7.5
7
6.5
6
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
MW-1
MW-2
MW-4
MW-5
MW-6
MW-6M
MW-7
MW-7R
MW-8
MW-9
MW-9R
MW-10
MW-10R
MW-11
MW-11M
MW-12
MW-13 ?
MW-OW
MW-HW
Richards

Figure E-2: Specific Conductance

Figure E-3: Chloride

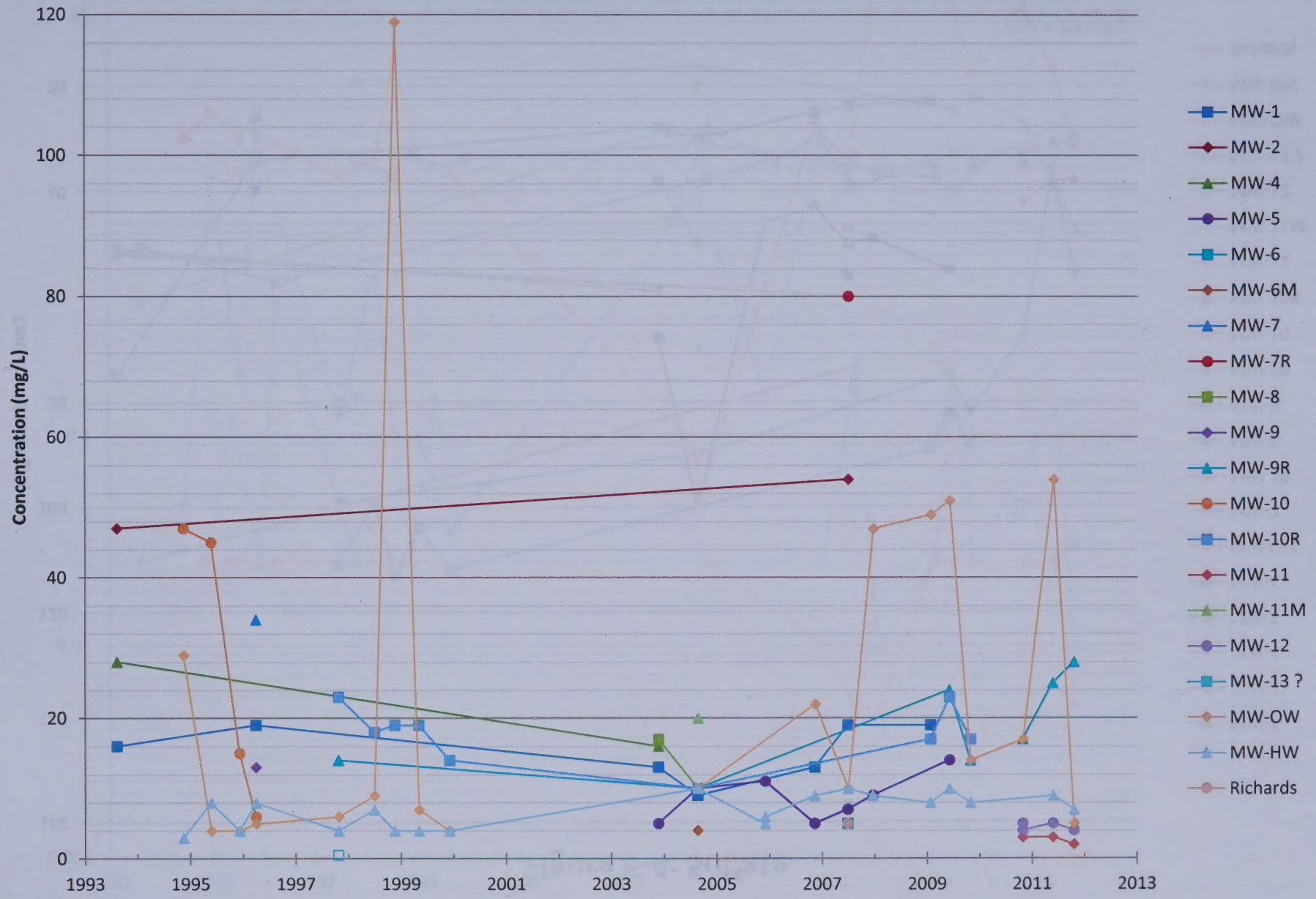


Figure E-4: Sulfate

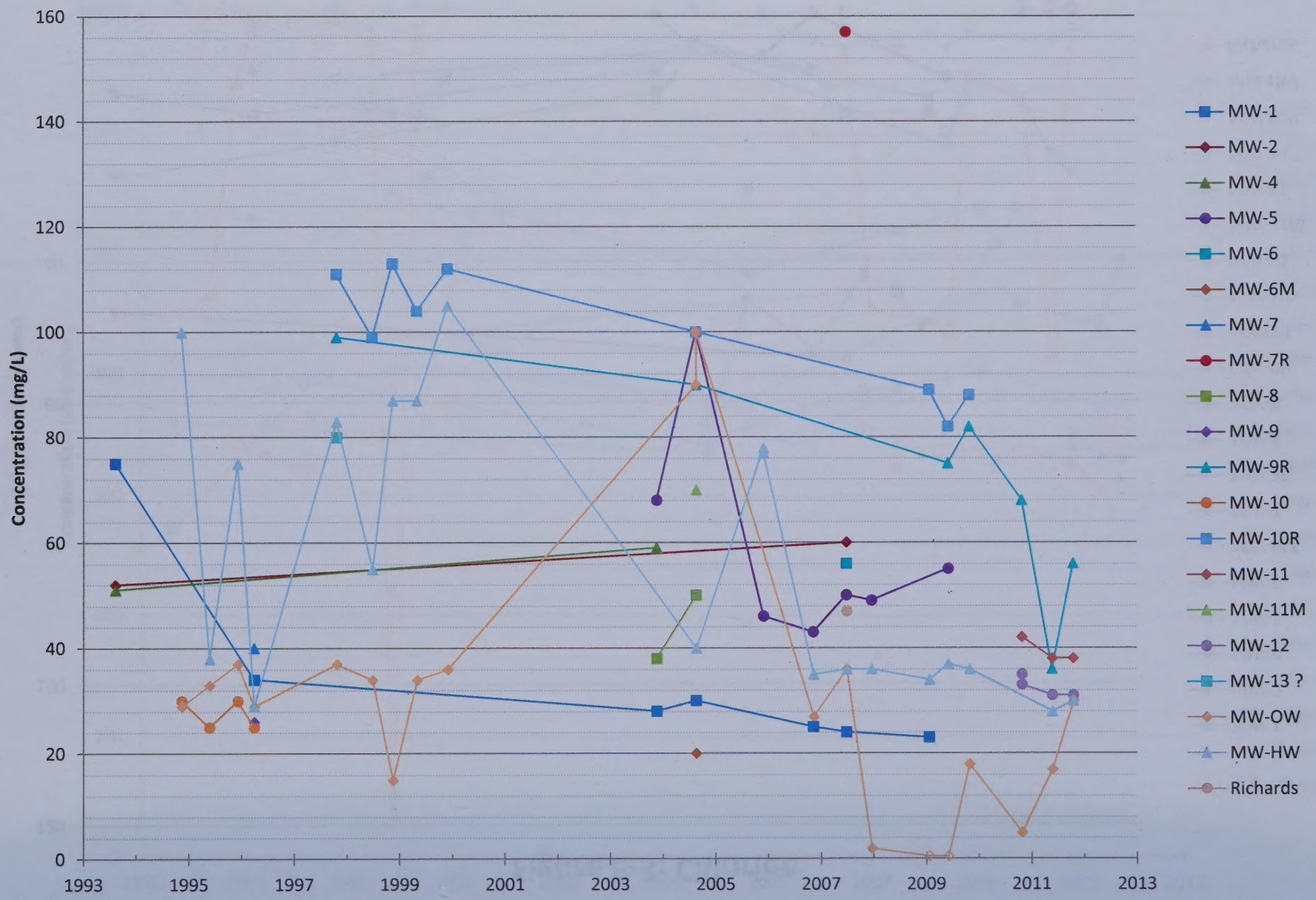


Figure E-5: Nitrate + Nitrite

Figure E-6: Iron

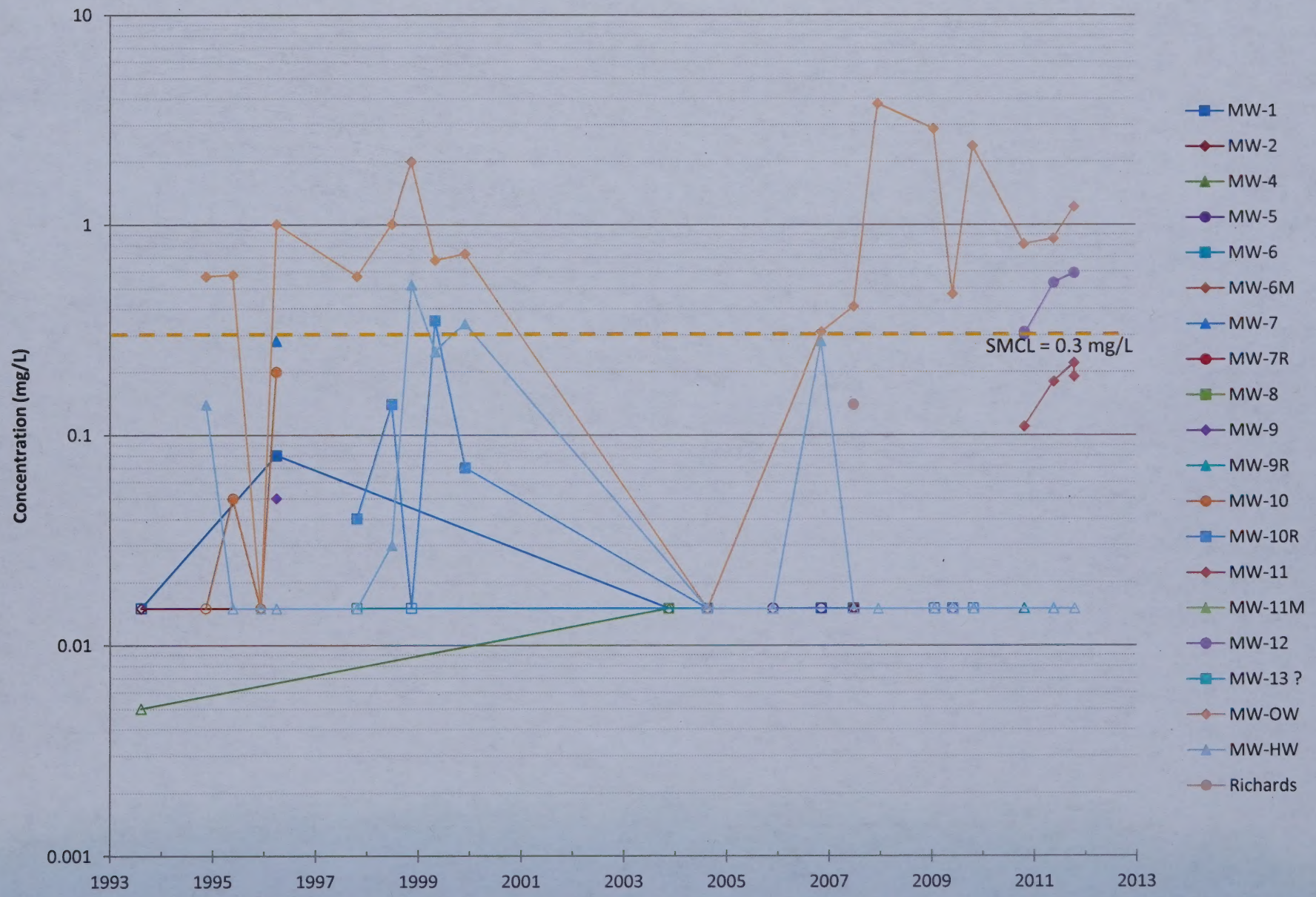


Figure E-7: Zinc

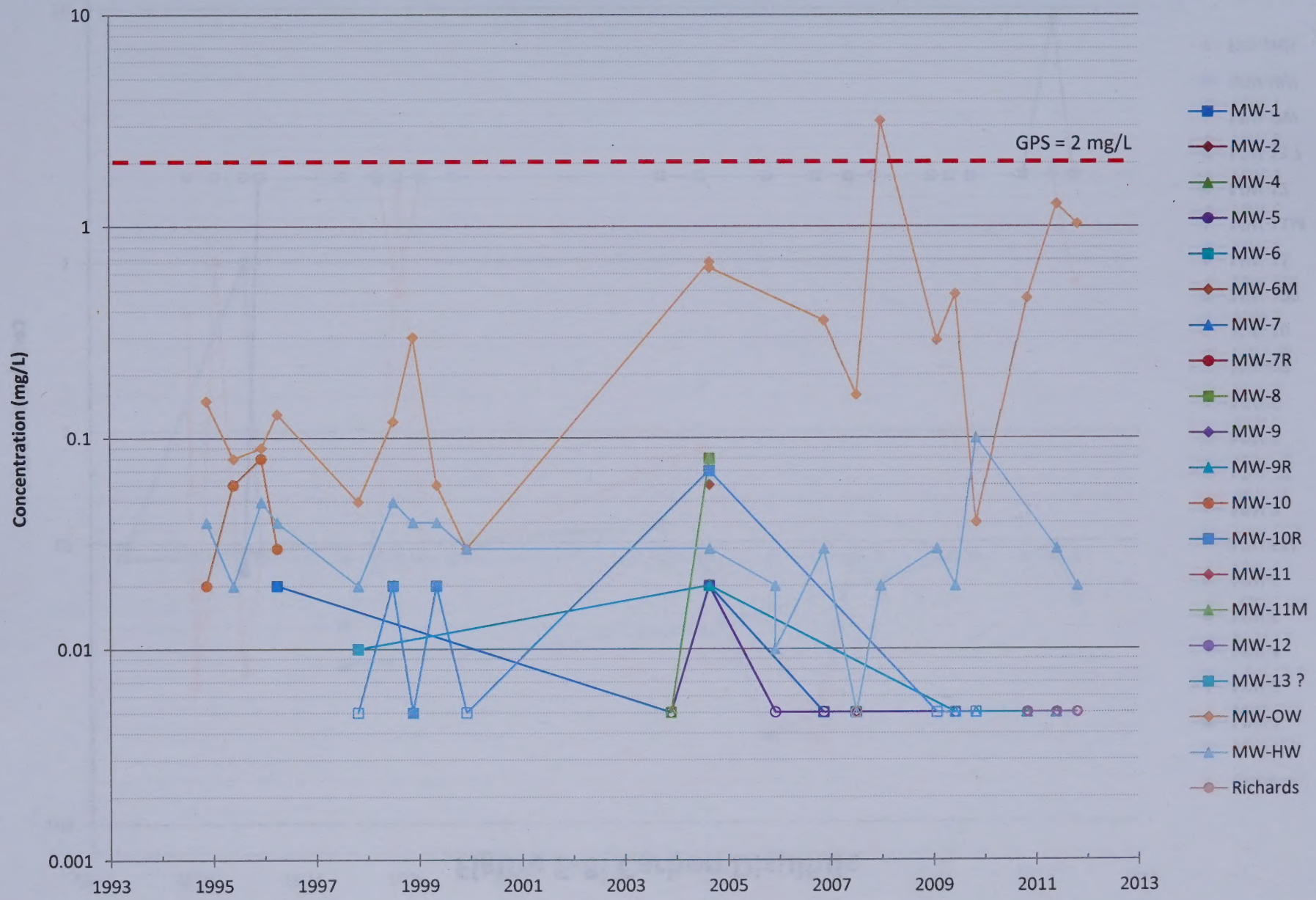


Figure E-8: Carbon Disulfide

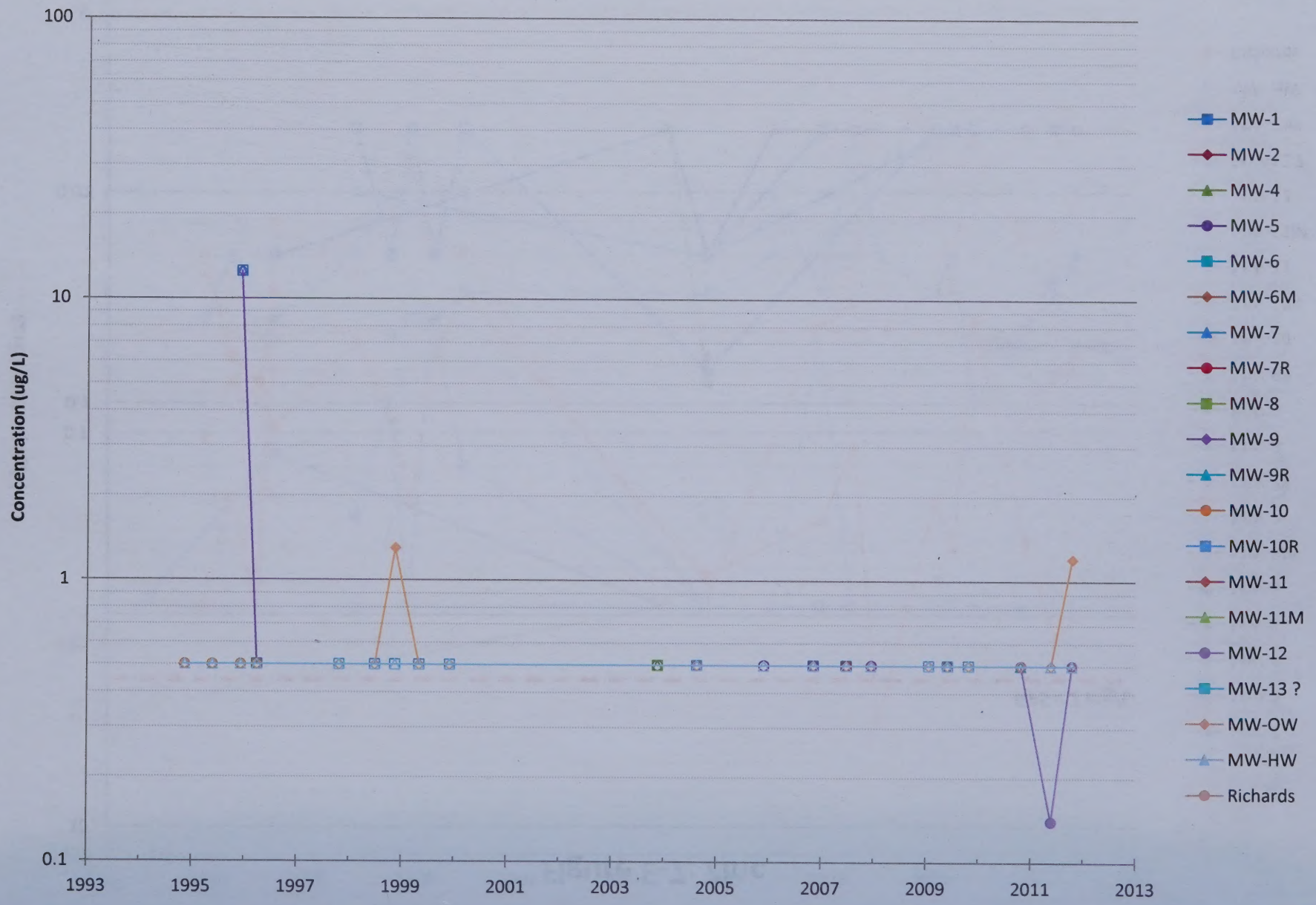


Figure E-9: Dichlorodifluoromethane

Figure E-10: cis-1,2-Dichloroethene

Figure E-11: Styrene

Figure E-12: Tetrachloroethene

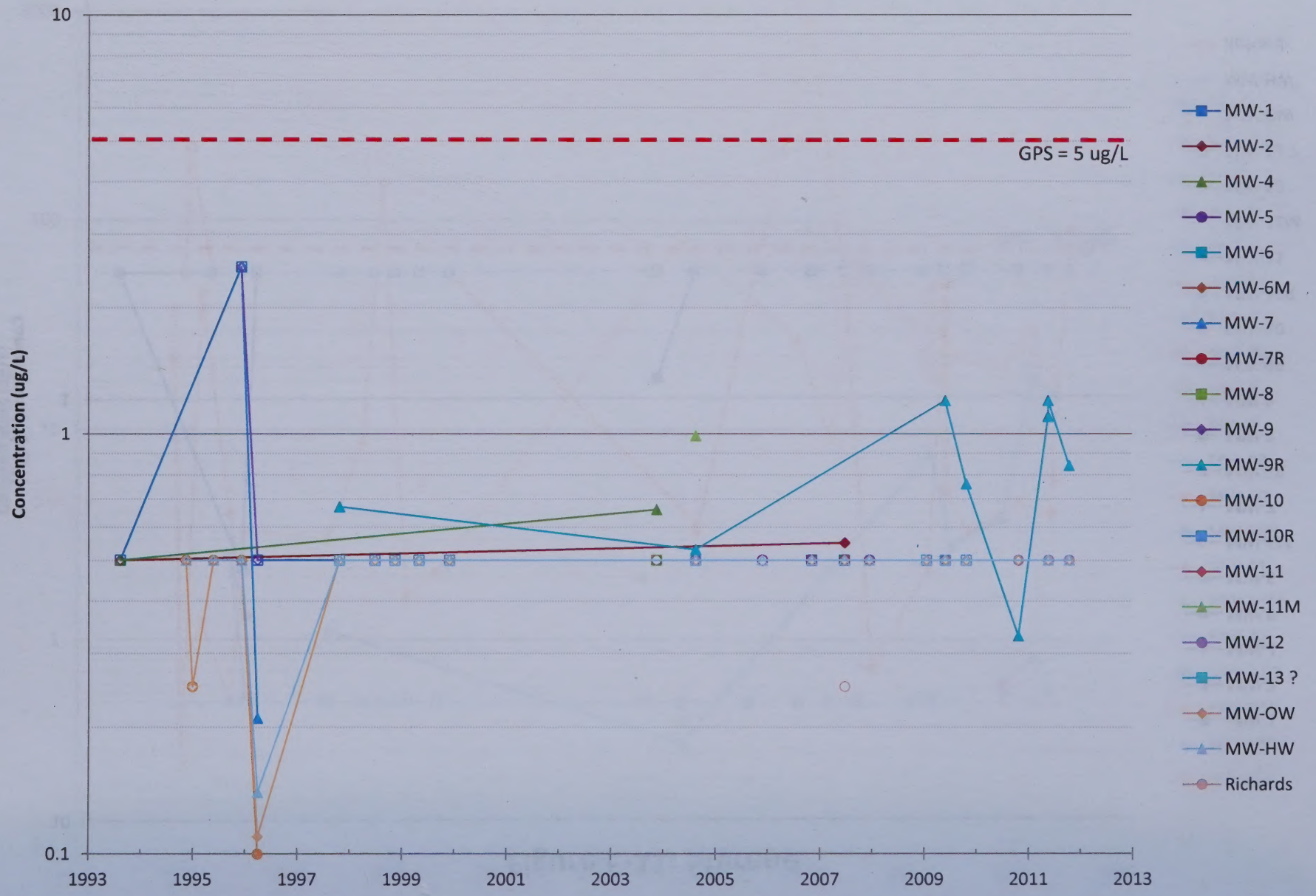
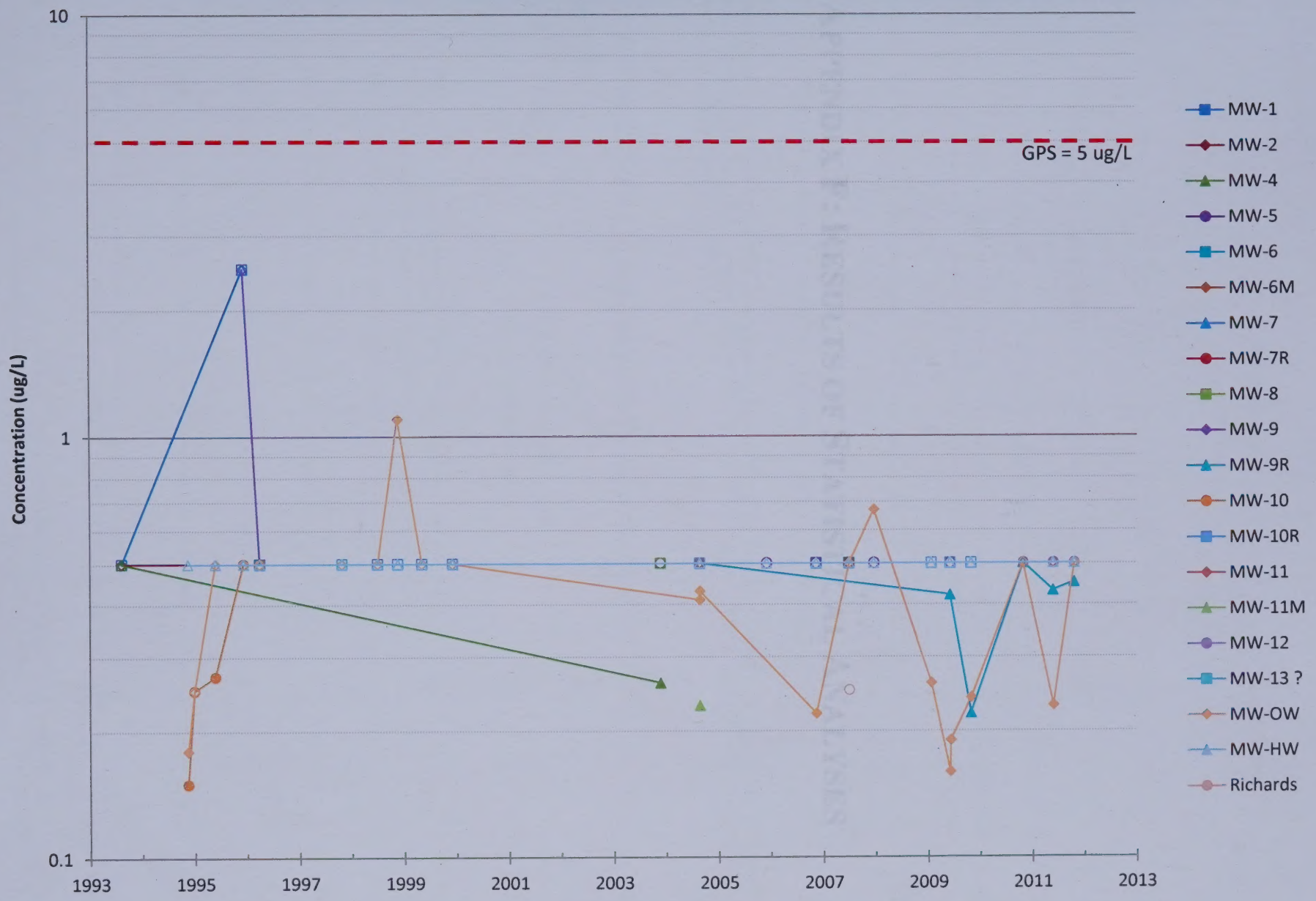


Figure E-13: Trichloroethene



APPENDIX F: RESULTS OF STATISTICAL ANALYSES

Figure F-1: Prediction Limit Analysis for pH

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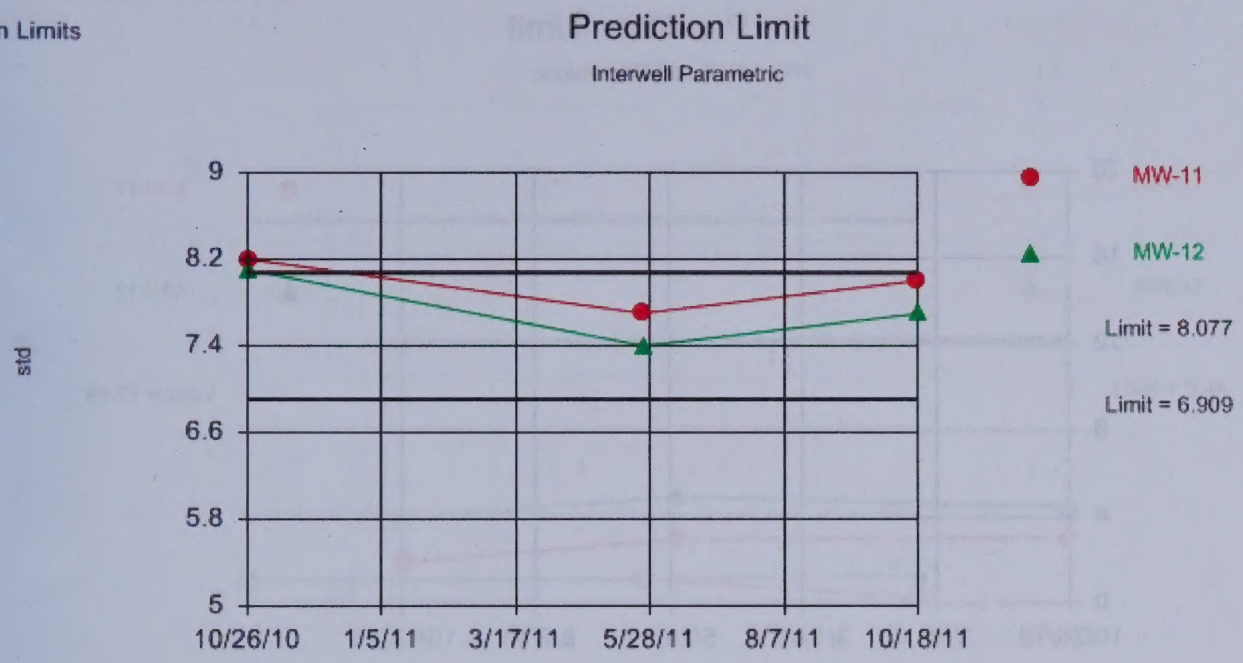
Within Limits



Background Data Summary: Mean=7.493, Std. Dev.=0.2343, n=20. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9723, critical = 0.905. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Figure F-2: Prediction Limit Analysis for Conductivity

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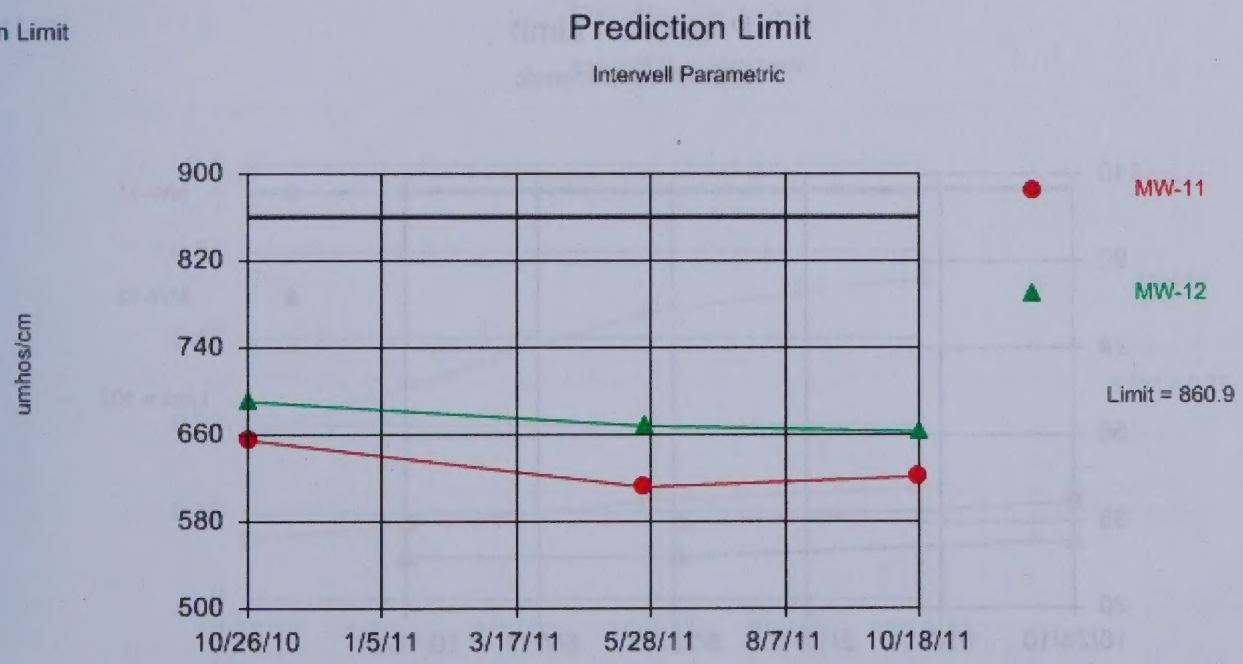
Within Limit



Background Data Summary: Mean=764, Std. Dev.=45.21, n=20. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9674, critical = 0.905. Report alpha = 0.05. Individual comparison alpha = 0.025. Most recent point for each compliance well compared to limit.

Figure F-3: Prediction Limit Analysis for Chloride

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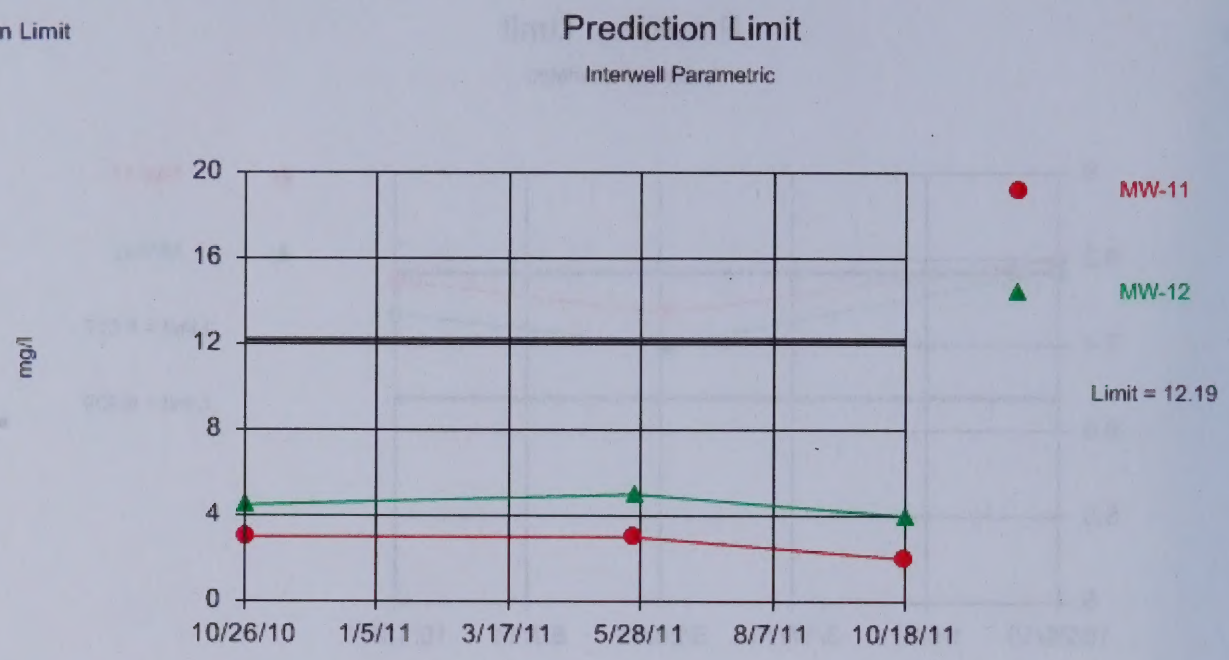
Within Limit



Background Data Summary: Mean=6.7, Std. Dev.=2.562, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.889, critical = 0.868. Report alpha = 0.05. Individual comparison alpha = 0.025. Most recent point for each compliance well compared to limit.

Figure F-4: Prediction Limit Analysis for Sulfate

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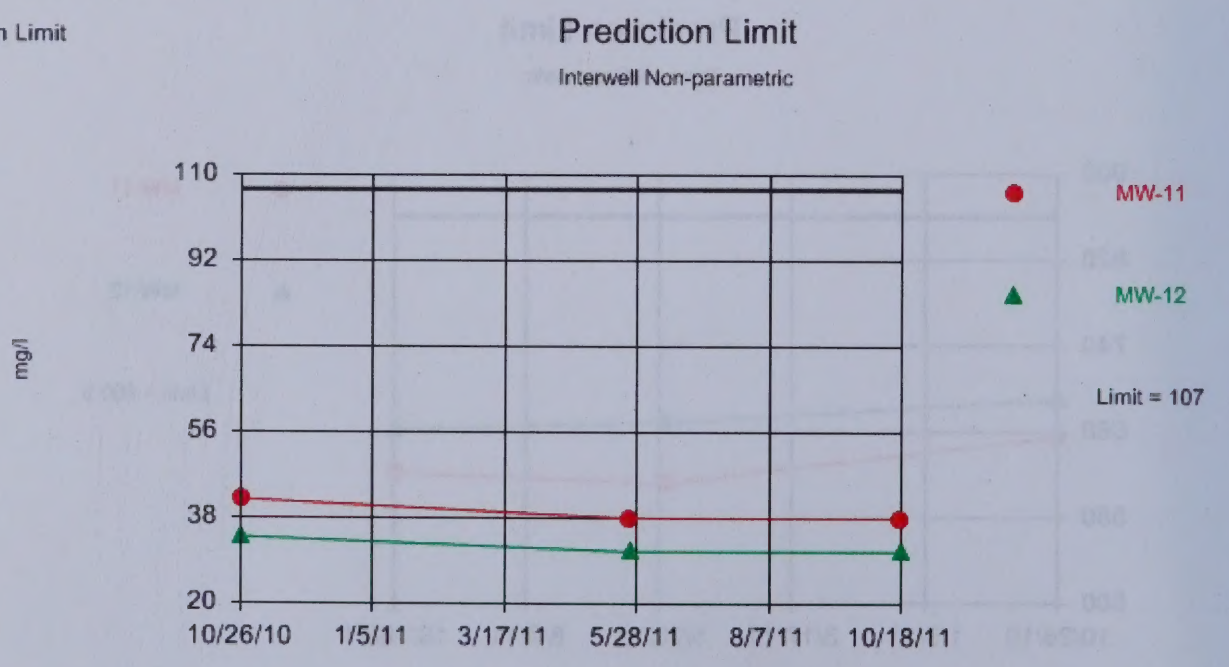
Within Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values Report alpha = 0.09091. Individual comparison alpha = 0.04654. Most recent point for each compliance well compared to limit.

Figure F-5: Prediction Limit Analysis for Nitrate + Nitrite

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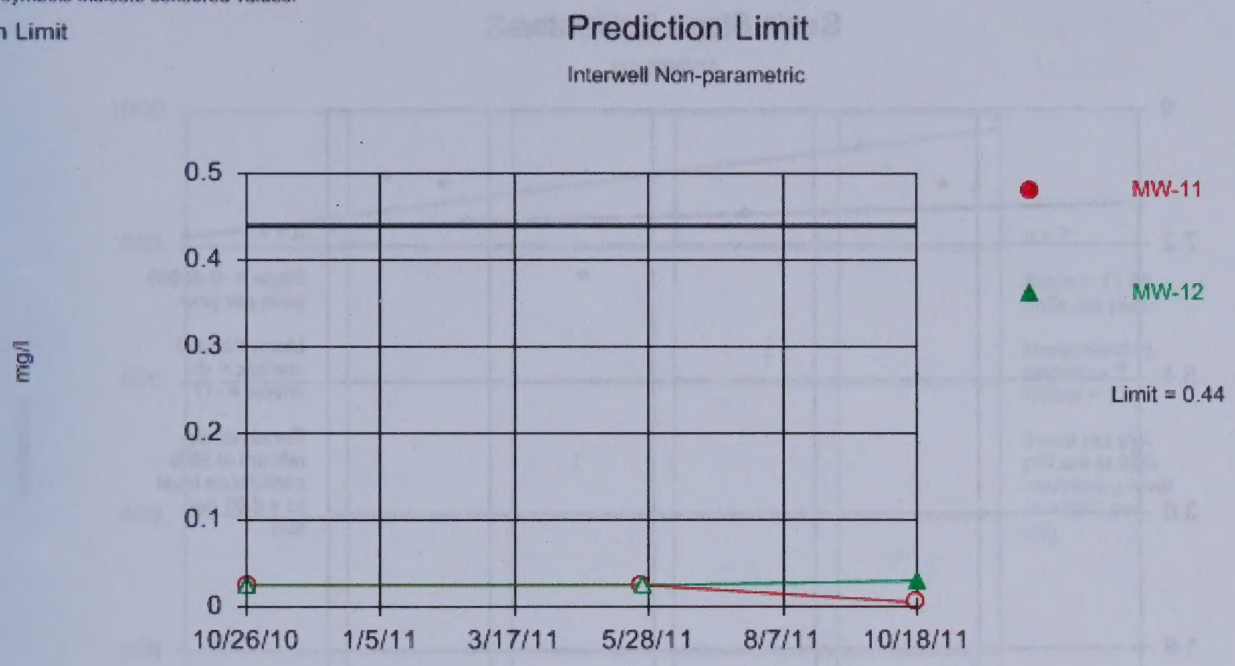
Hollow symbols indicate censored values.

Within Limit



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 20 background values. 55% NDs Report alpha = 0.09091. Individual comparison alpha = 0.04654. Most recent point for each compliance well compared to limit.

Figure F-6: Prediction Limit Analysis for Iron

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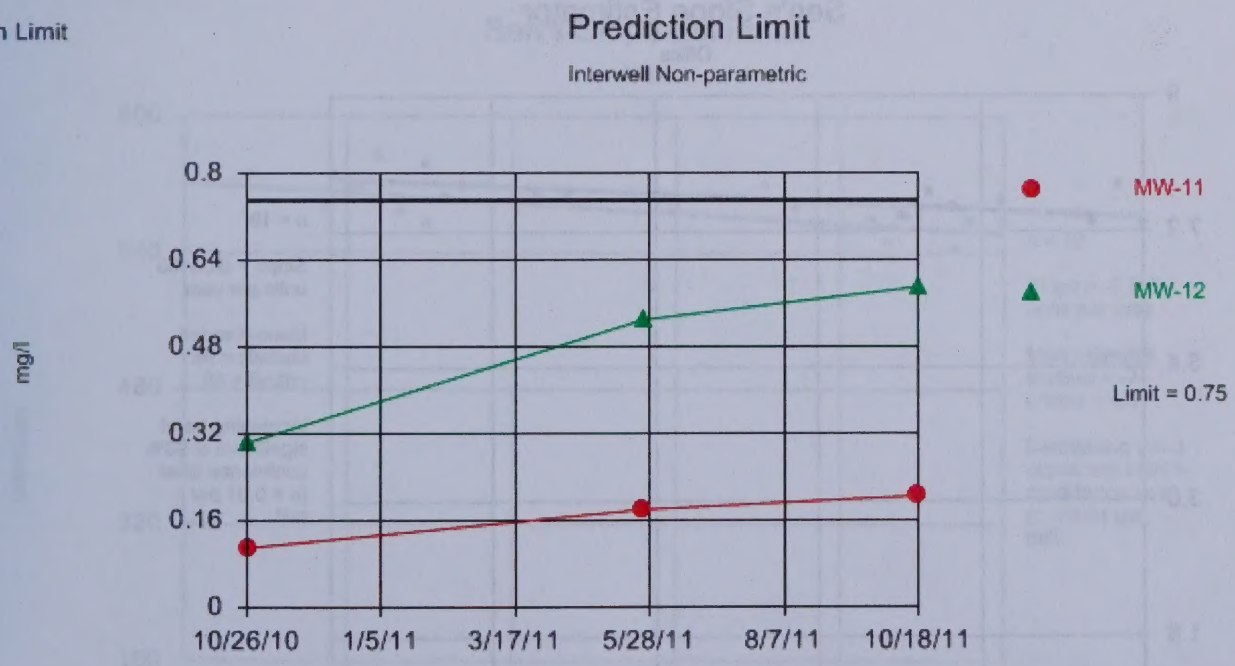
Within Limit



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 20 background values. 65% NDs Report alpha = 0.09091. Individual comparison alpha = 0.04654. Most recent point for each compliance well compared to limit.

Figure F-7: Trend Analysis for pH in MW-9R

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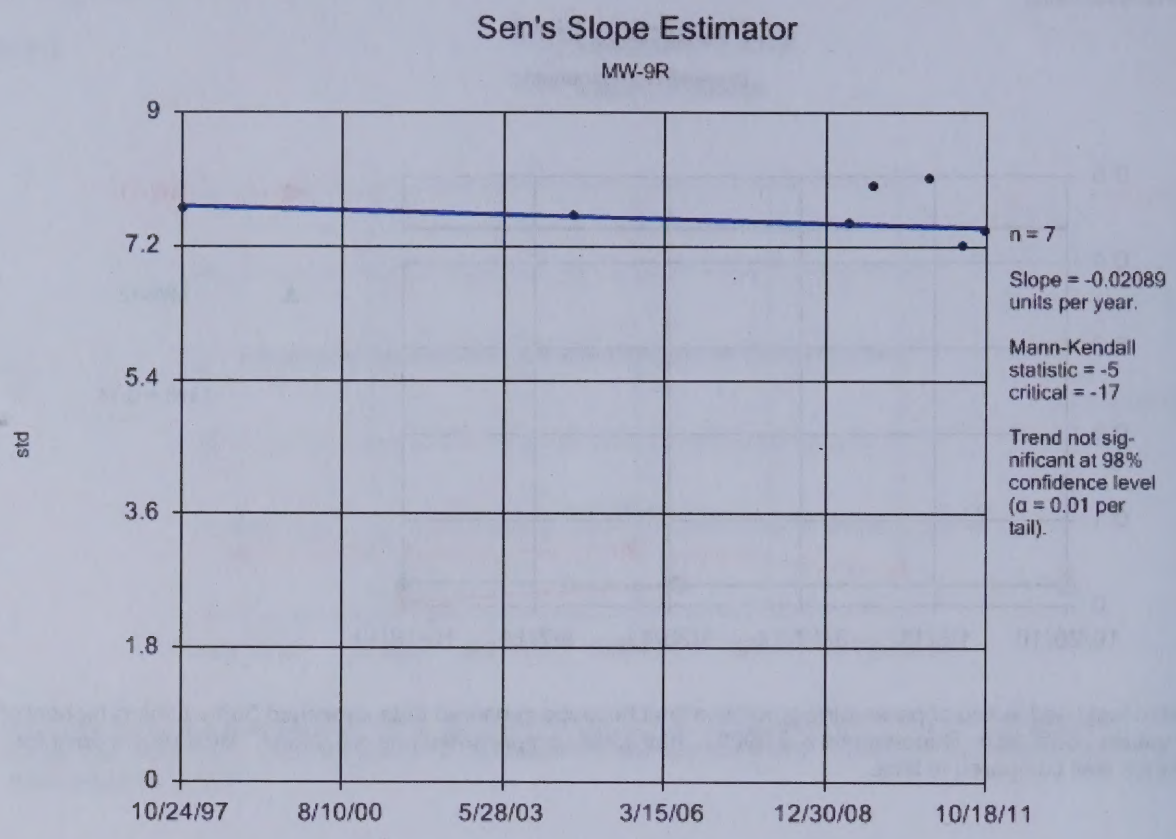

Figure F-8: Trend Analysis for pH in MW-OW

v.9.0.34 For regulatory purposes only. EPA

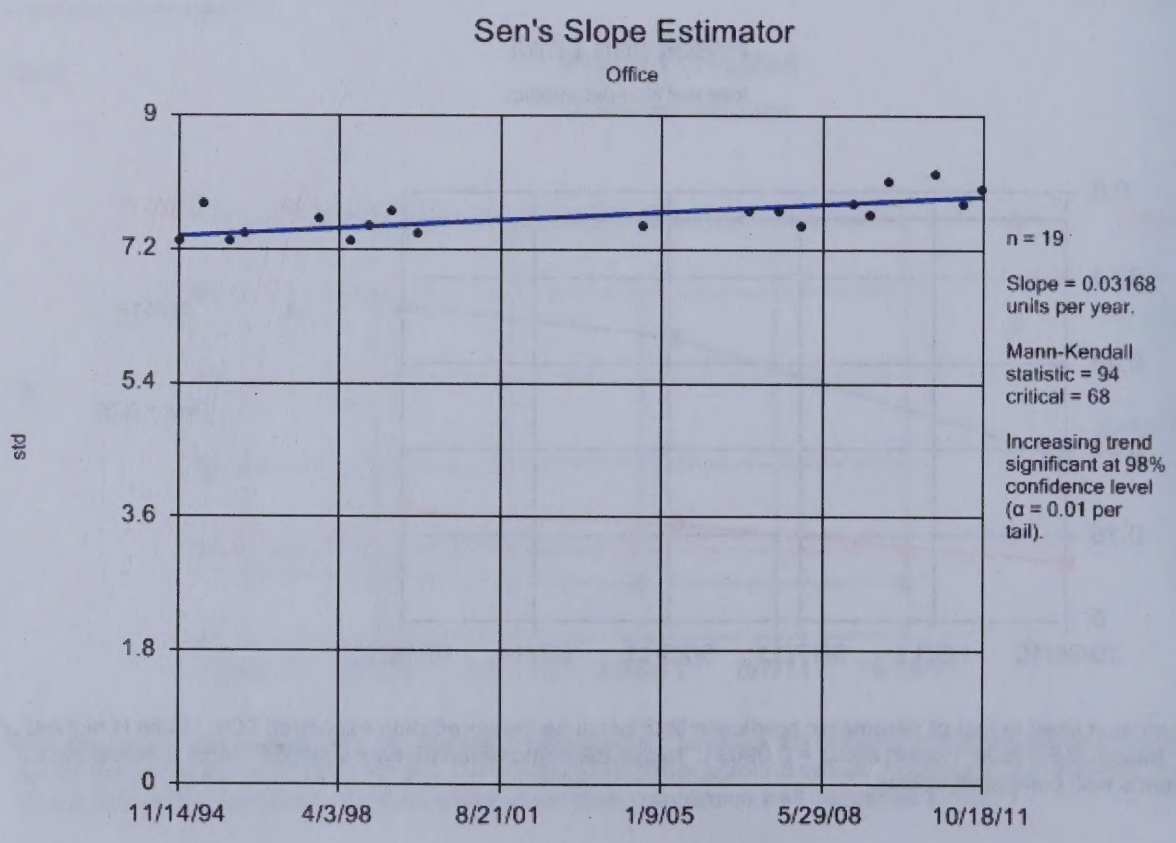

Figure F-9: Trend Analysis for Conductivity in MW-9R

v.9.0.34 For regulatory purposes only. EPA

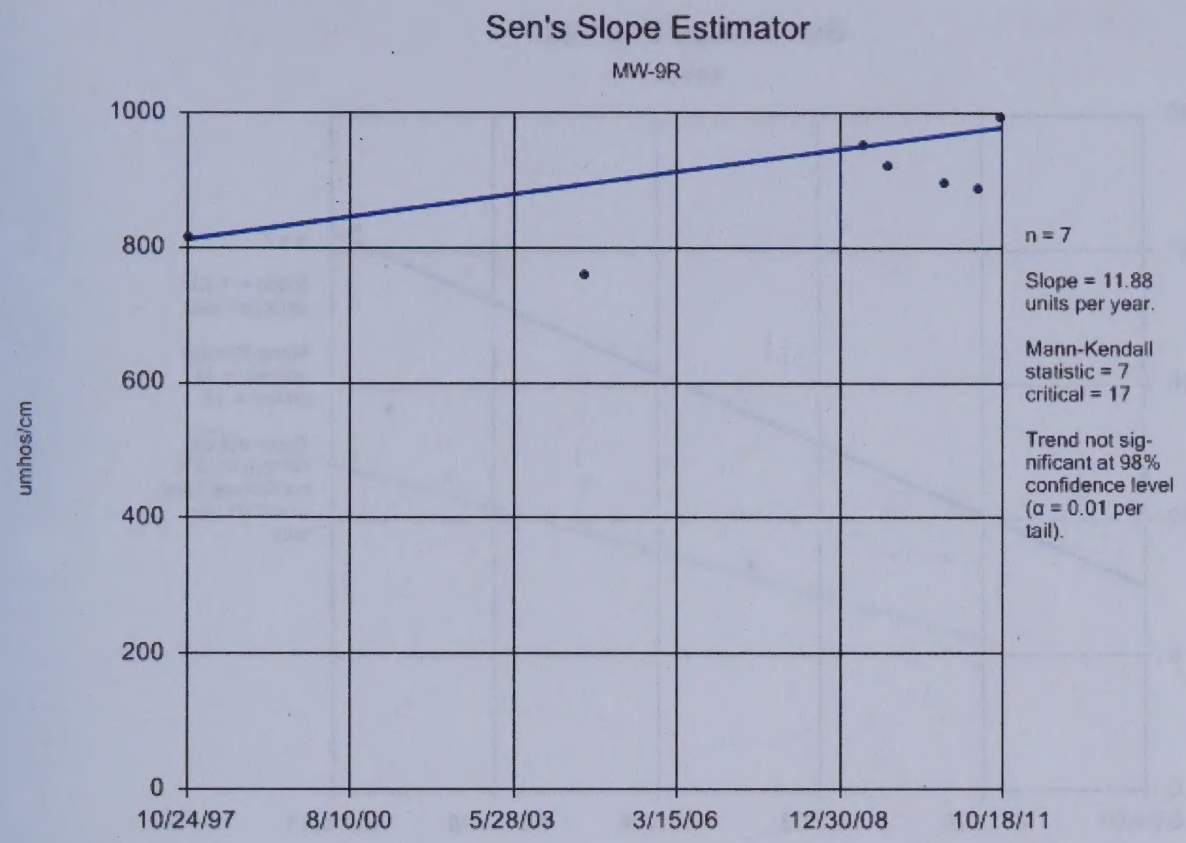

Figure F-10: Trend Analysis for Conductivity in MW-OW

v.9.0.34 For regulatory purposes only. EPA

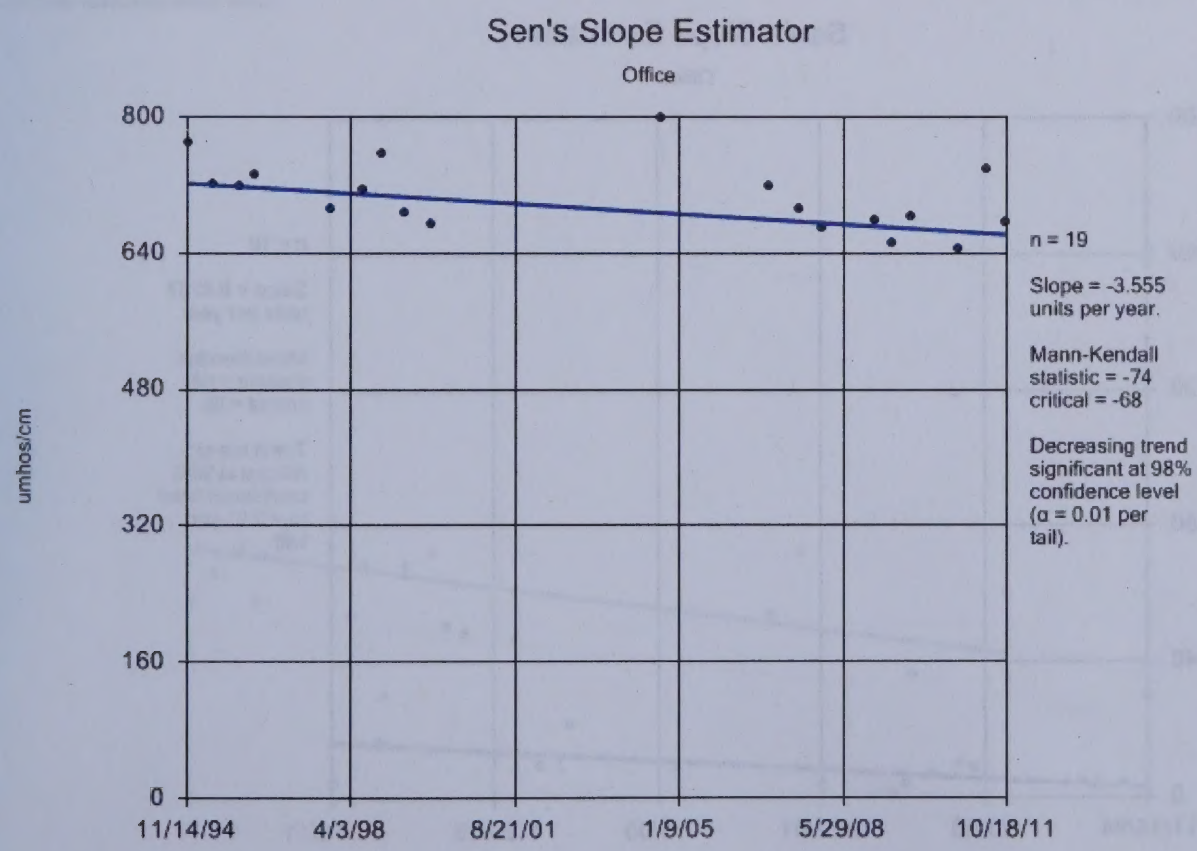

Figure F-11: Trend Analysis for Chloride in MW-9R

v.9.0.34 For regulatory purposes only. EPA

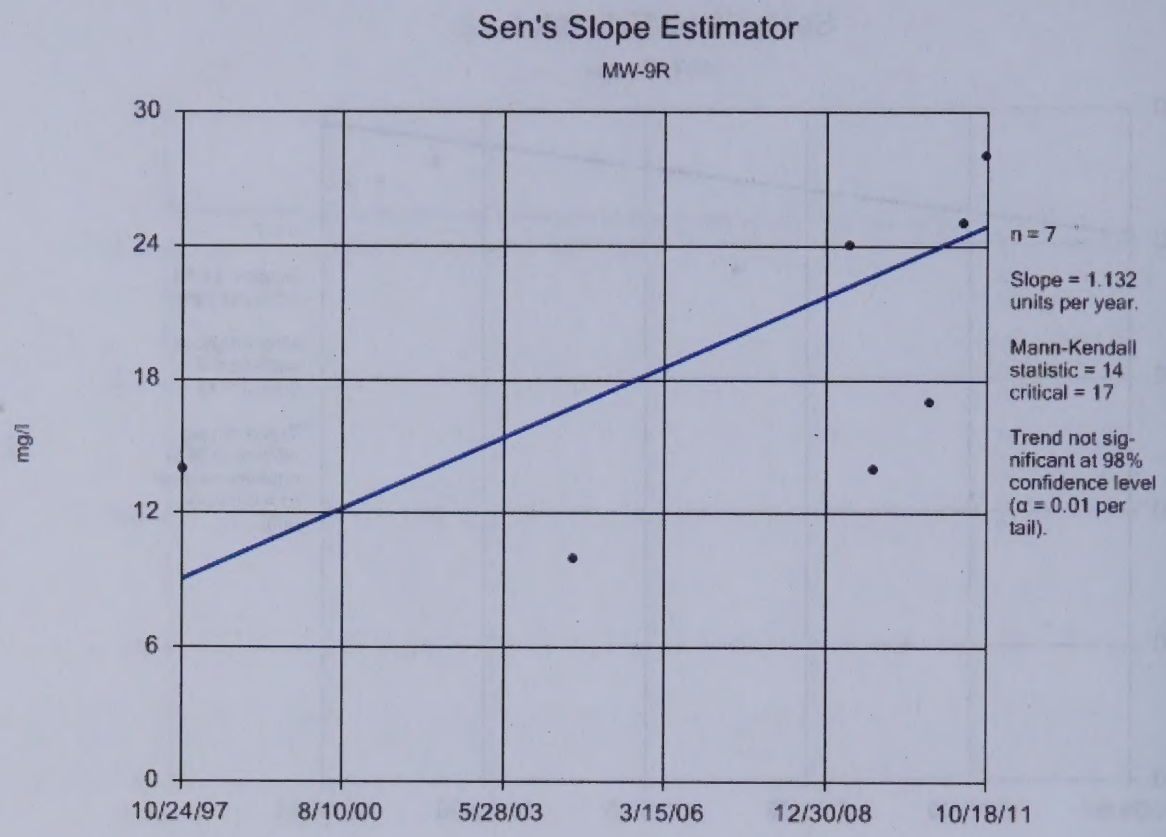

Figure F-12: Trend Analysis for Chloride in MW-OW

v.9.0.34 For regulatory purposes only. EPA

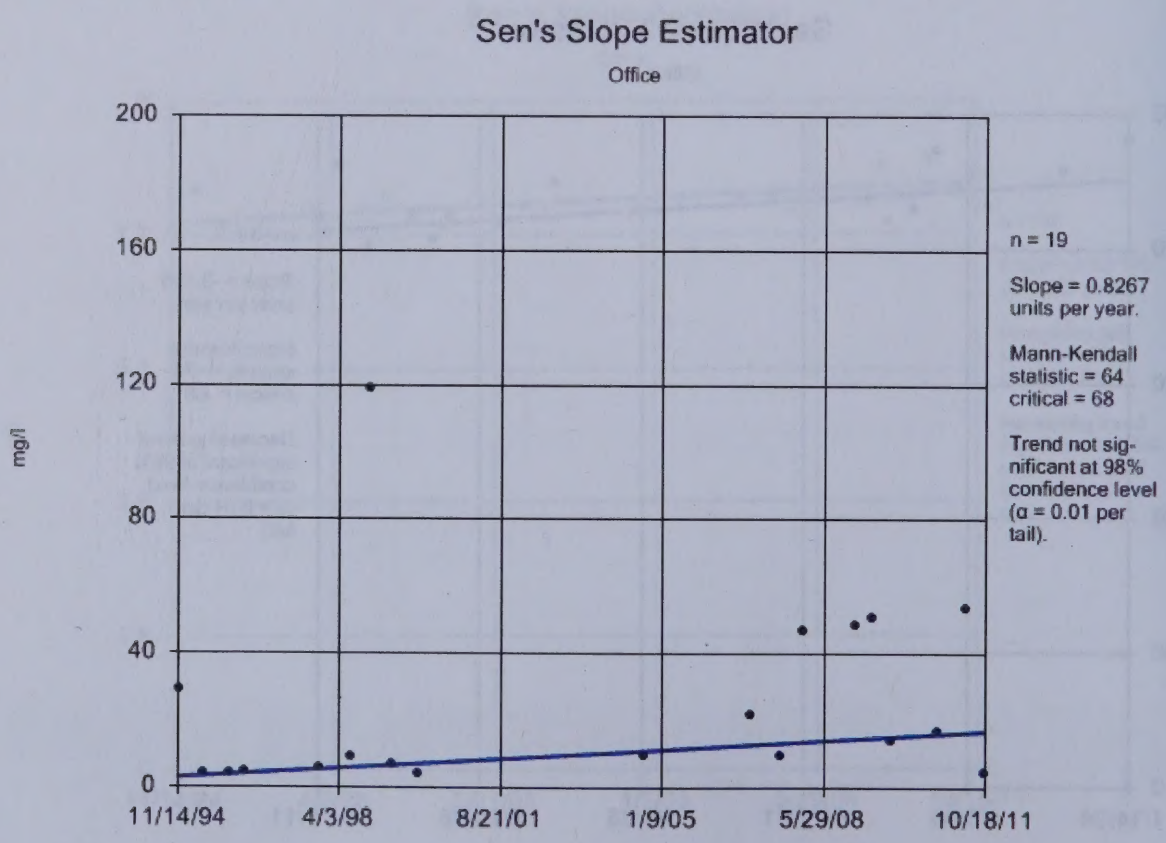

Figure F-13: Trend Analysis for Sulfate in MW-9R

v.9.0.34 For regulatory purposes only. EPA

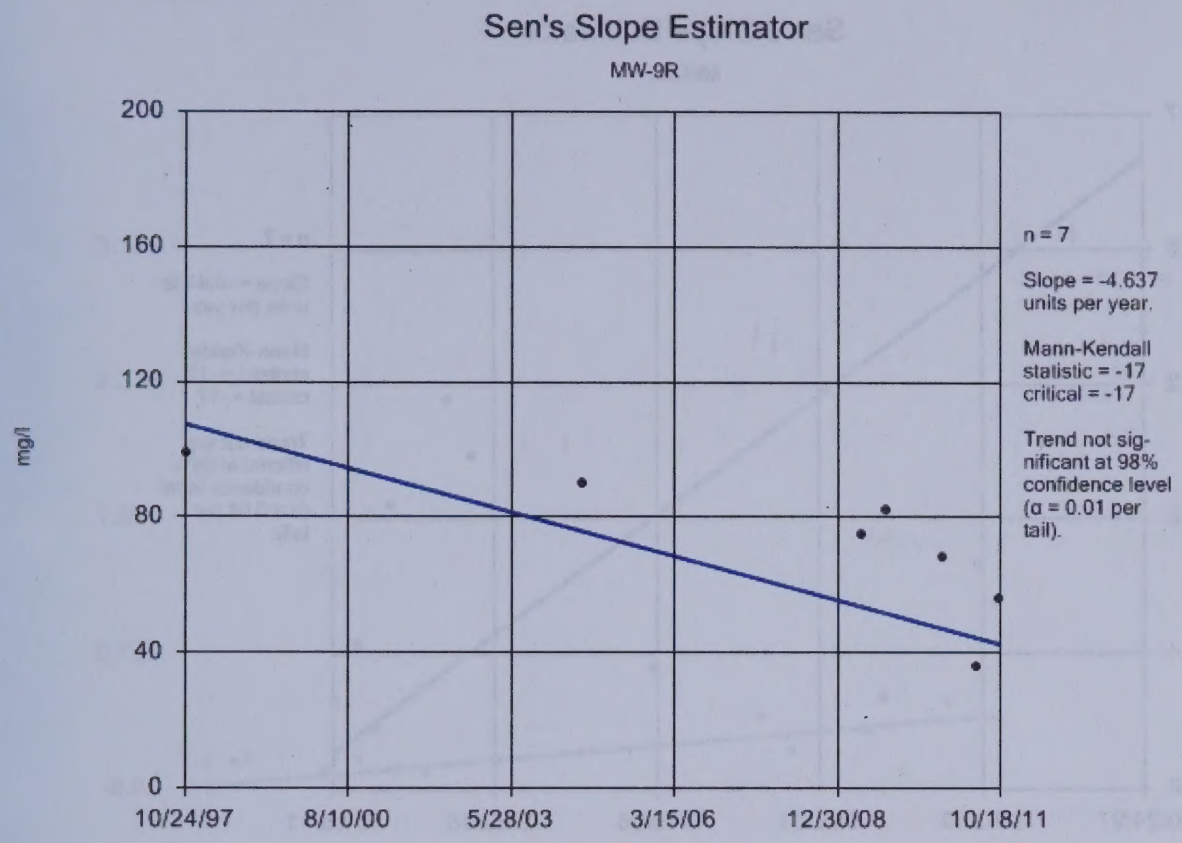

Figure F-14: Trend Analysis for Sulfate in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

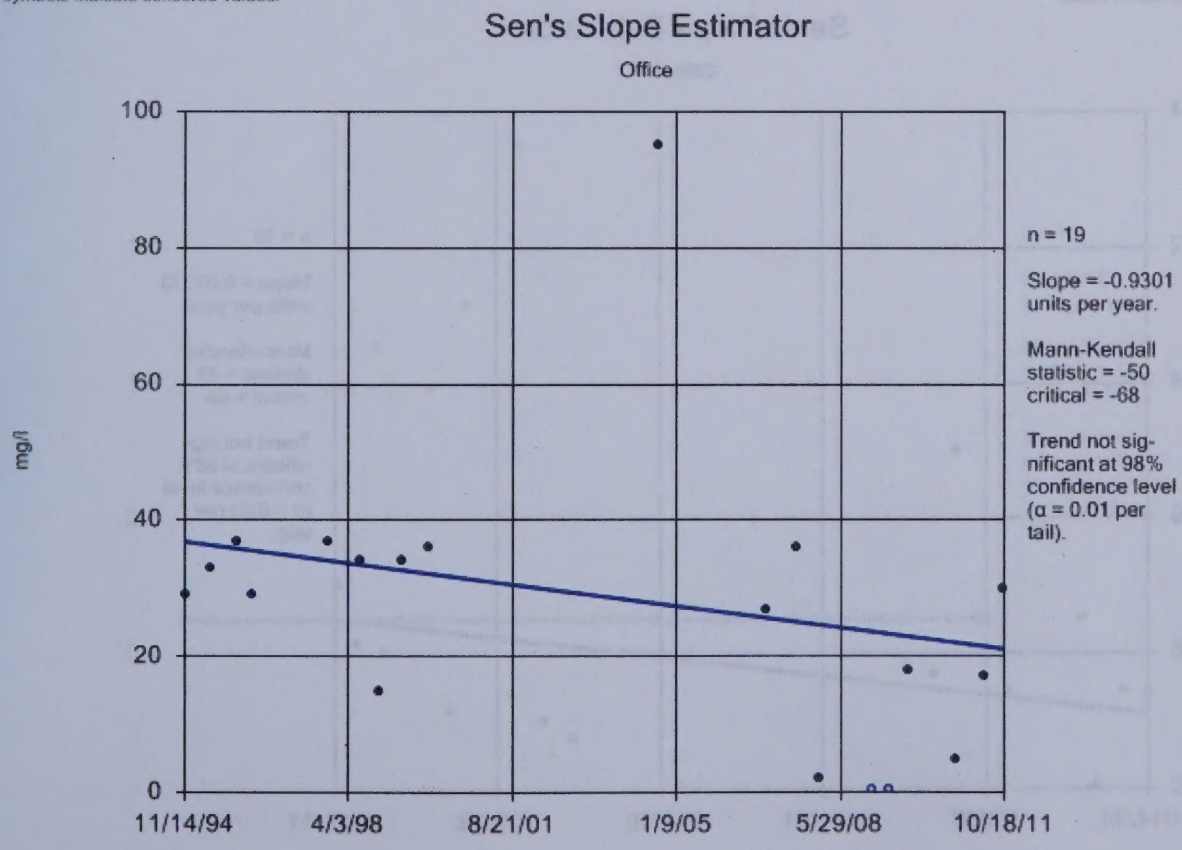

Figure F-15: Trend Analysis for Nitrate + Nitrite in MW-9R

v.9.0.34 For regulatory purposes only. EPA

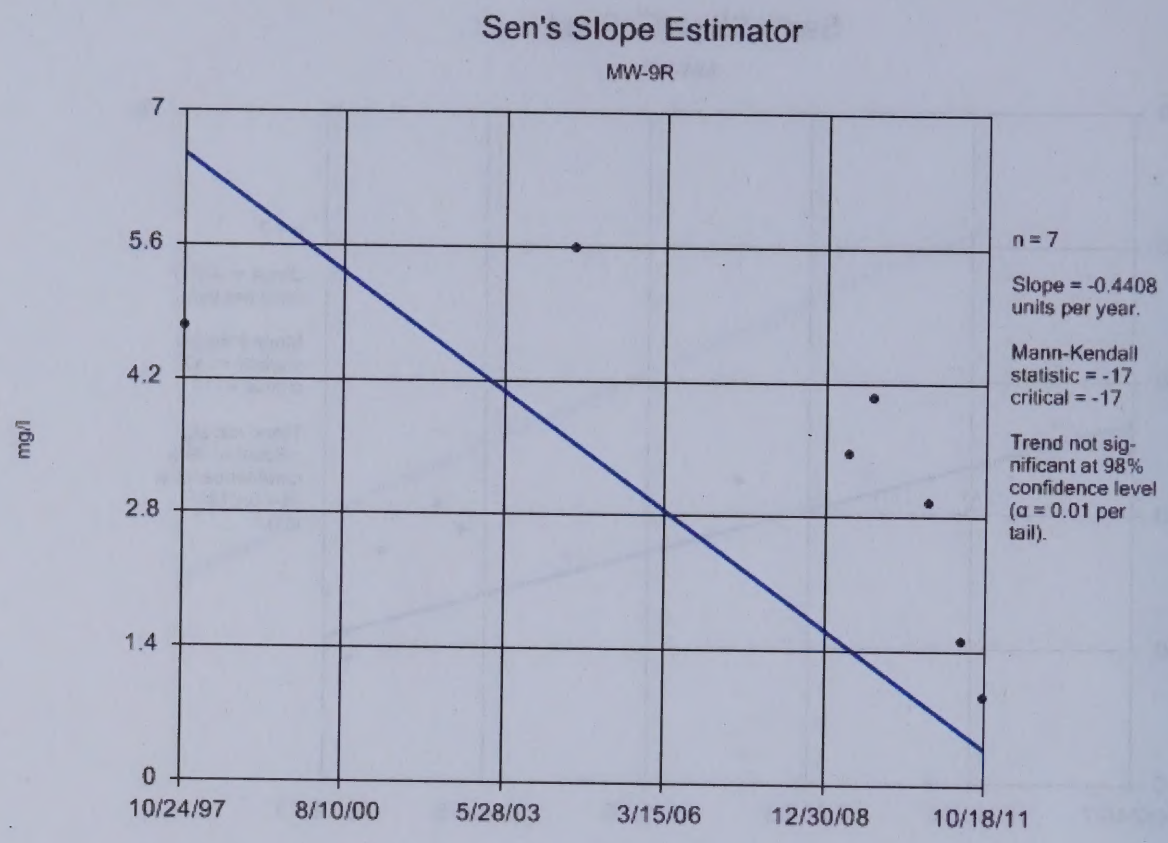

Figure F-16: Trend Analysis for Iron in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

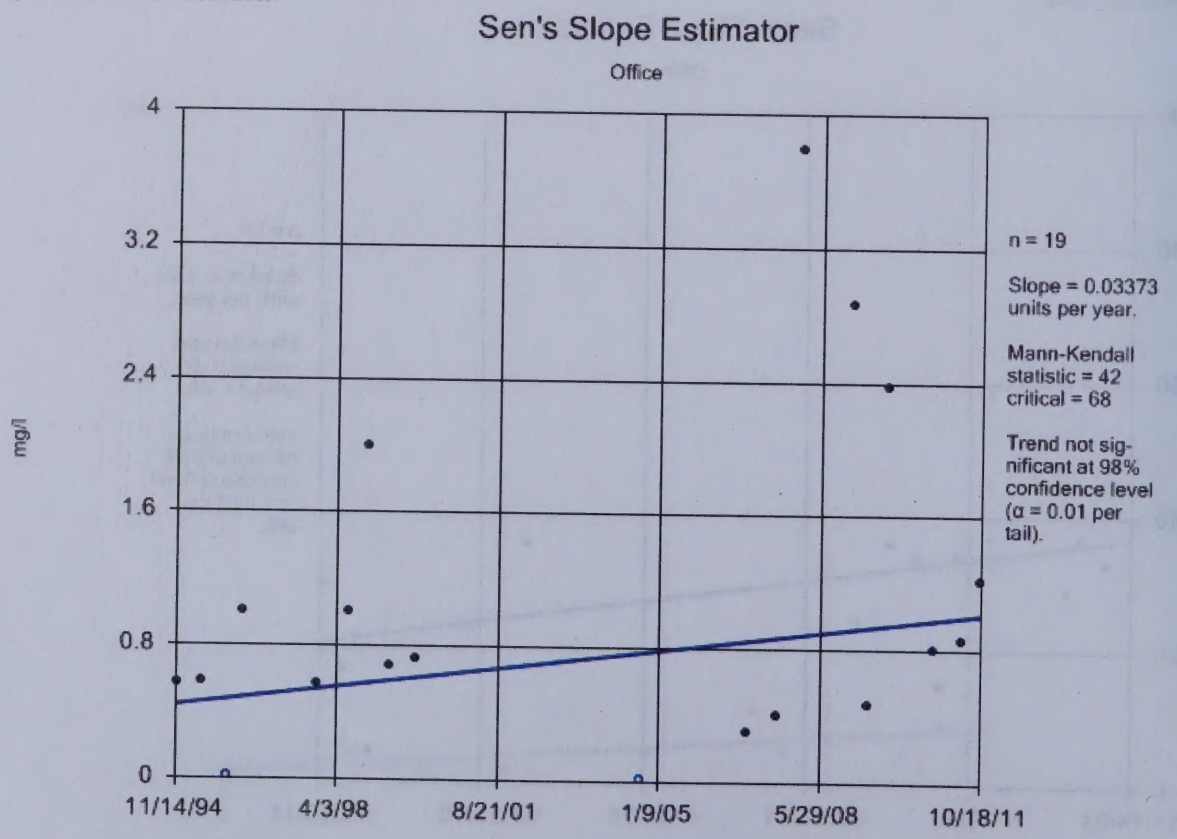

Figure F-17: Trend Analysis for Zinc in MW-OW

v.9.0.34 For regulatory purposes only. EPA

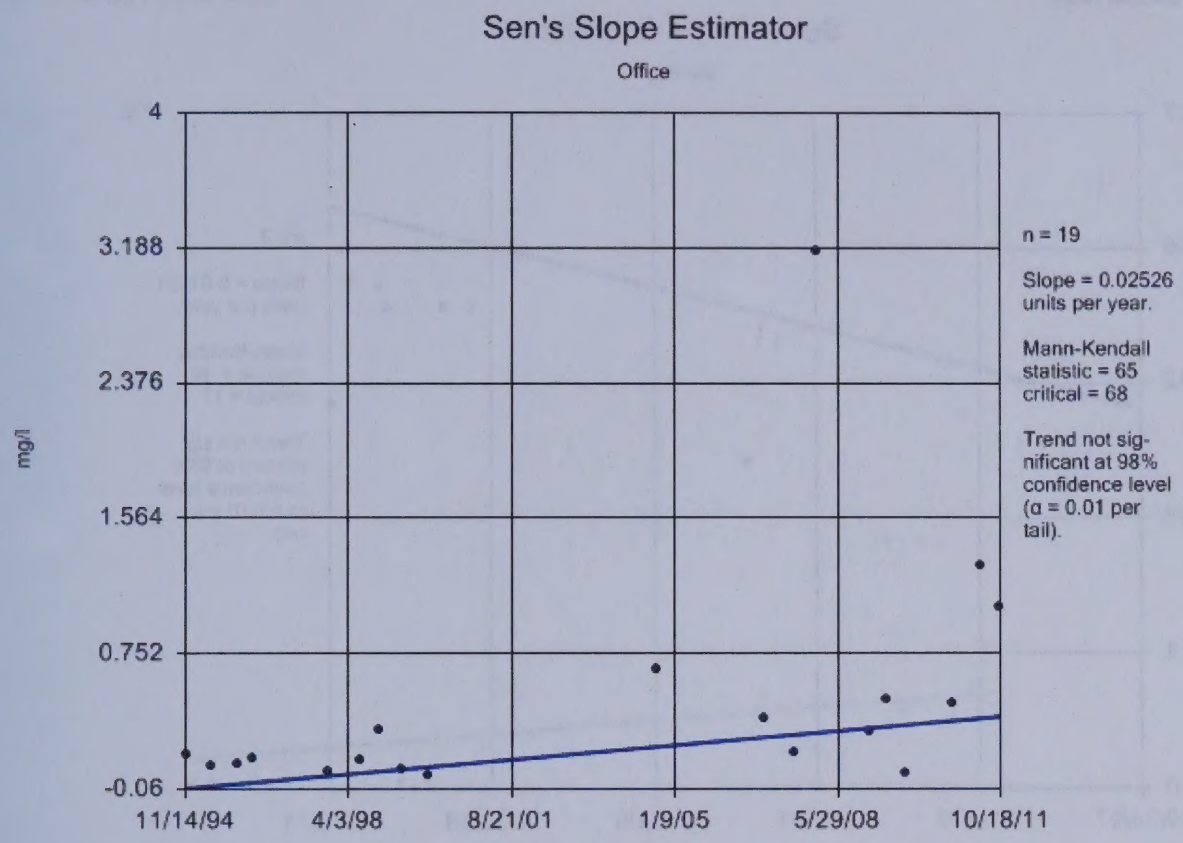

Figure F-18: Trend Analysis for Carbon disulfide in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

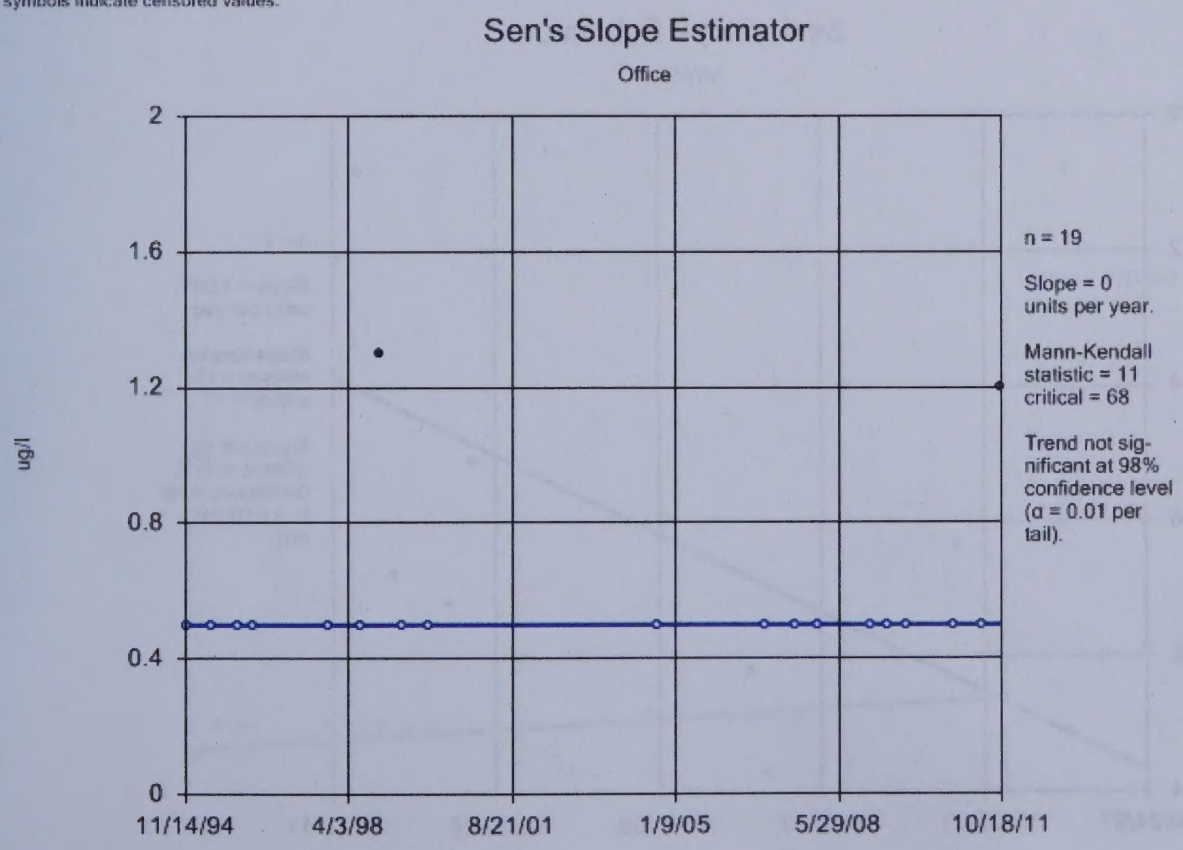

Figure F-19: Trend Analysis for Dichlorodifluoromethane in MW-9R

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

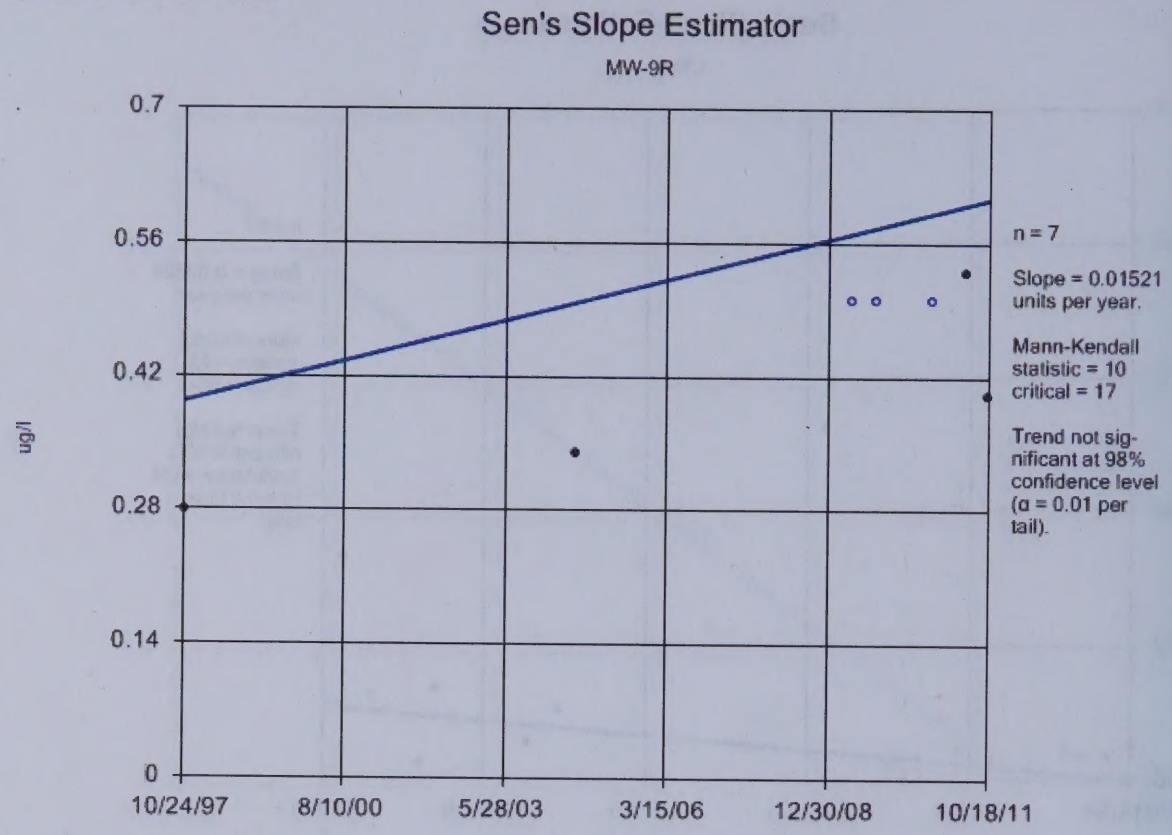

Figure F-20: Trend Analysis for cis-1,2-Dichloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA

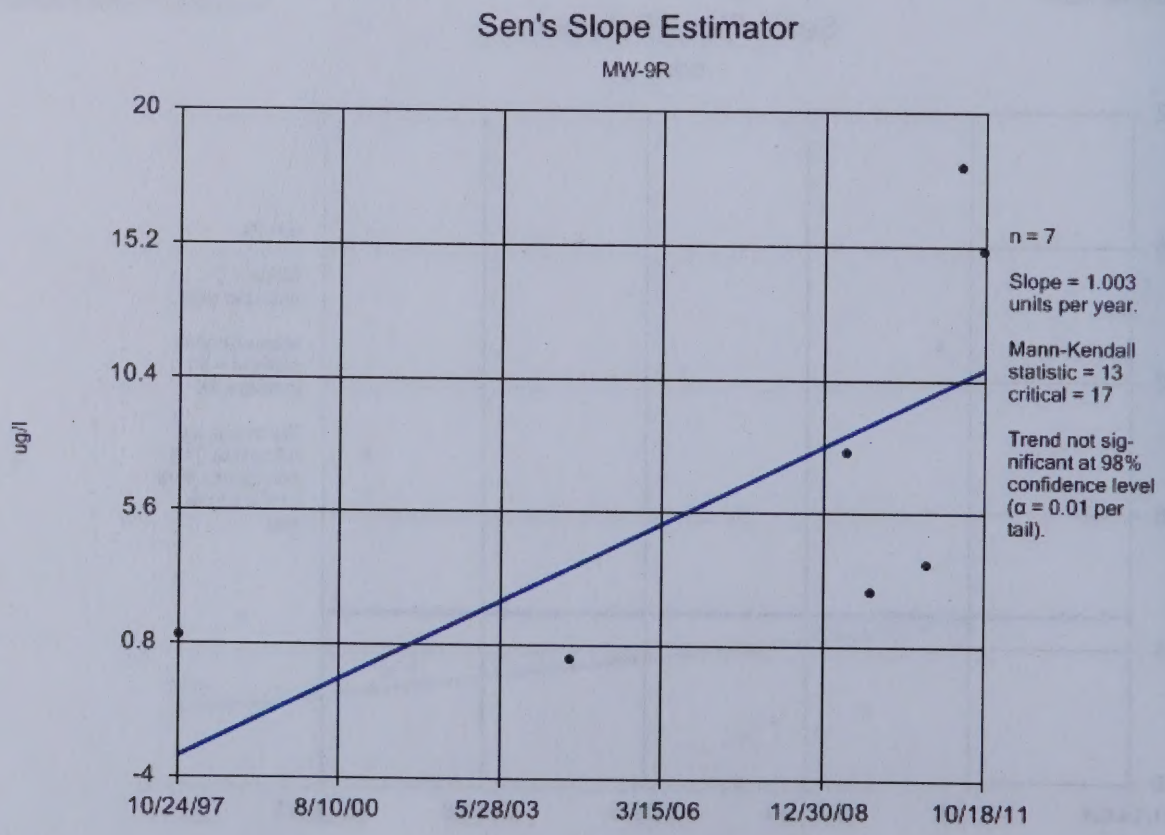

Figure F-21: Trend Analysis for cis-1,2-Dichloroethene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

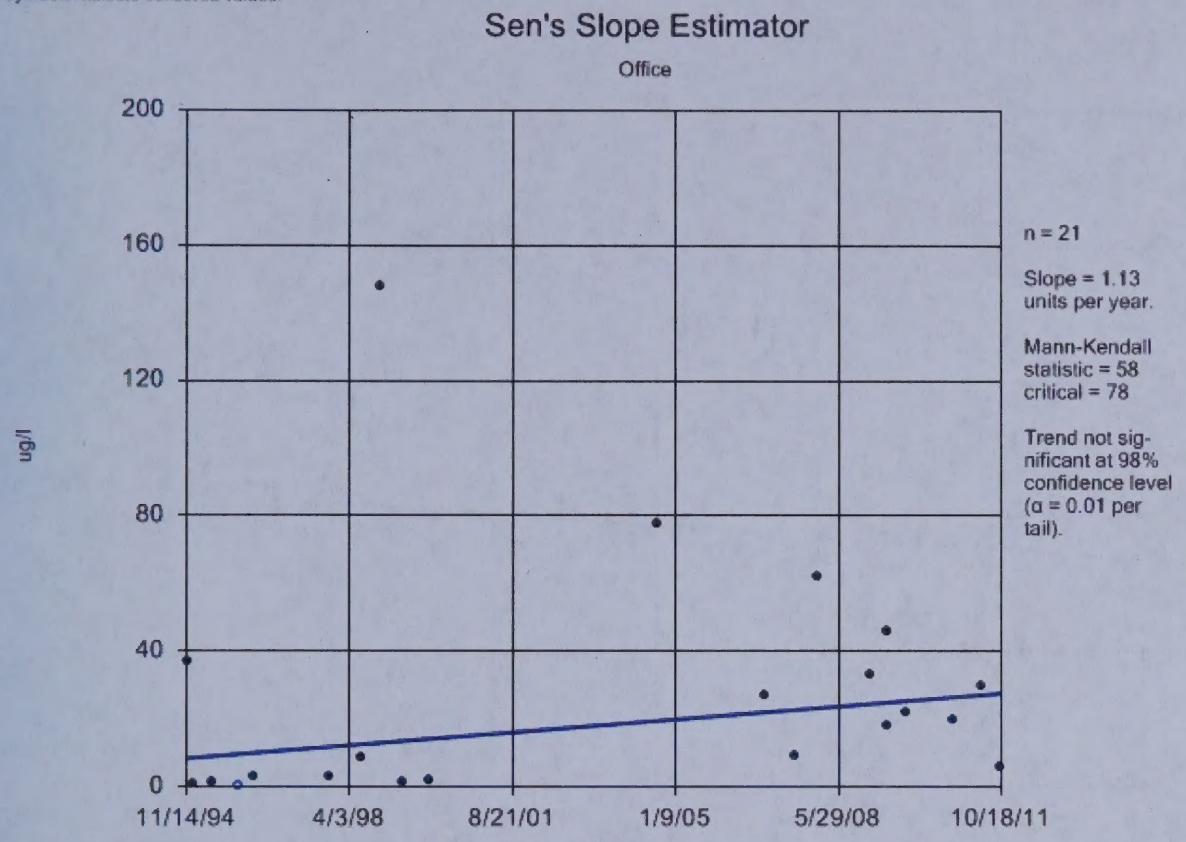

Figure F-22: Trend Analysis for Styrene in MW-OW

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.

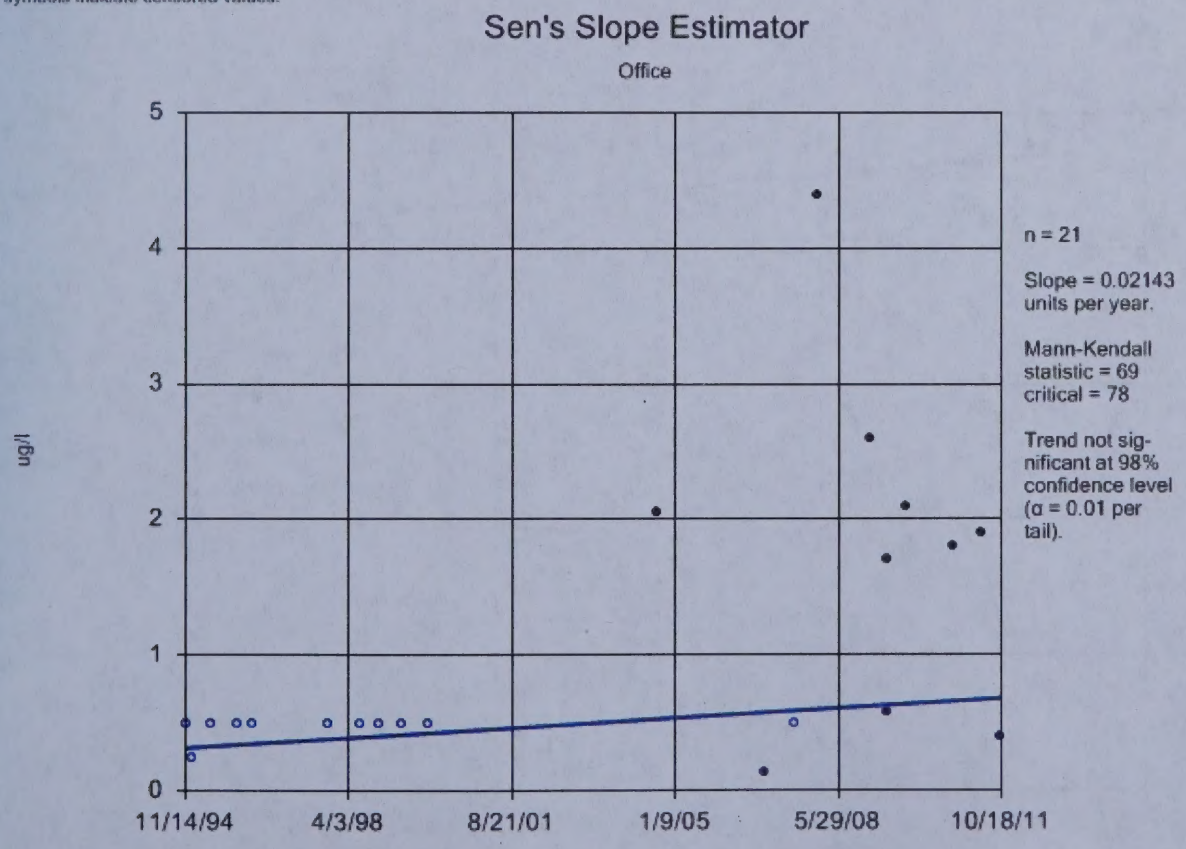

Figure F-23: Trend Analysis for Tetrachloroethene MW-9R

v.9.0.34 For regulatory purposes only. EPA

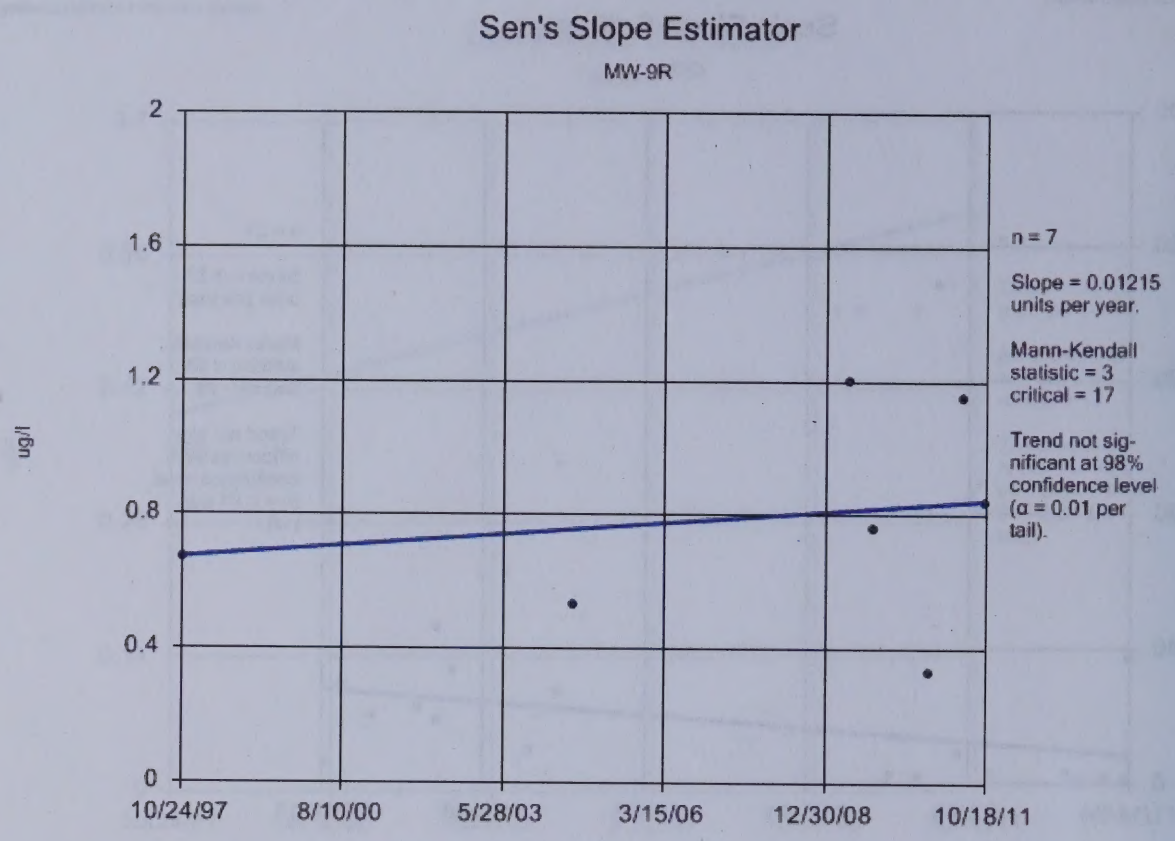

Figure F-24: Trend Analysis for Trichloroethene in MW-9R

v.9.0.34 For regulatory purposes only. EPA
Hollow symbols indicate censored values.